



SunStar®

USER'S MANUAL

SPS/ D-BI 254 Series
SPS/ D-BI 263 Series

Direct Drive, Electronically
Controlled Decorative
Pattern Tacking Machine
(Mechanical Part)



- 1) FOR AT MOST USE WITH EASINESS,
PLEASE CERTAINLY READ THIS MANUAL
BEFORE STARTING USE.
- 2) KEEP THIS MANUAL IN SAFE PLACE FOR
REFERENCE WHEN THE MACHINE BREAKS
DOWN.

SUNSTAR MACHINERY CO., LTD.

MME-051130

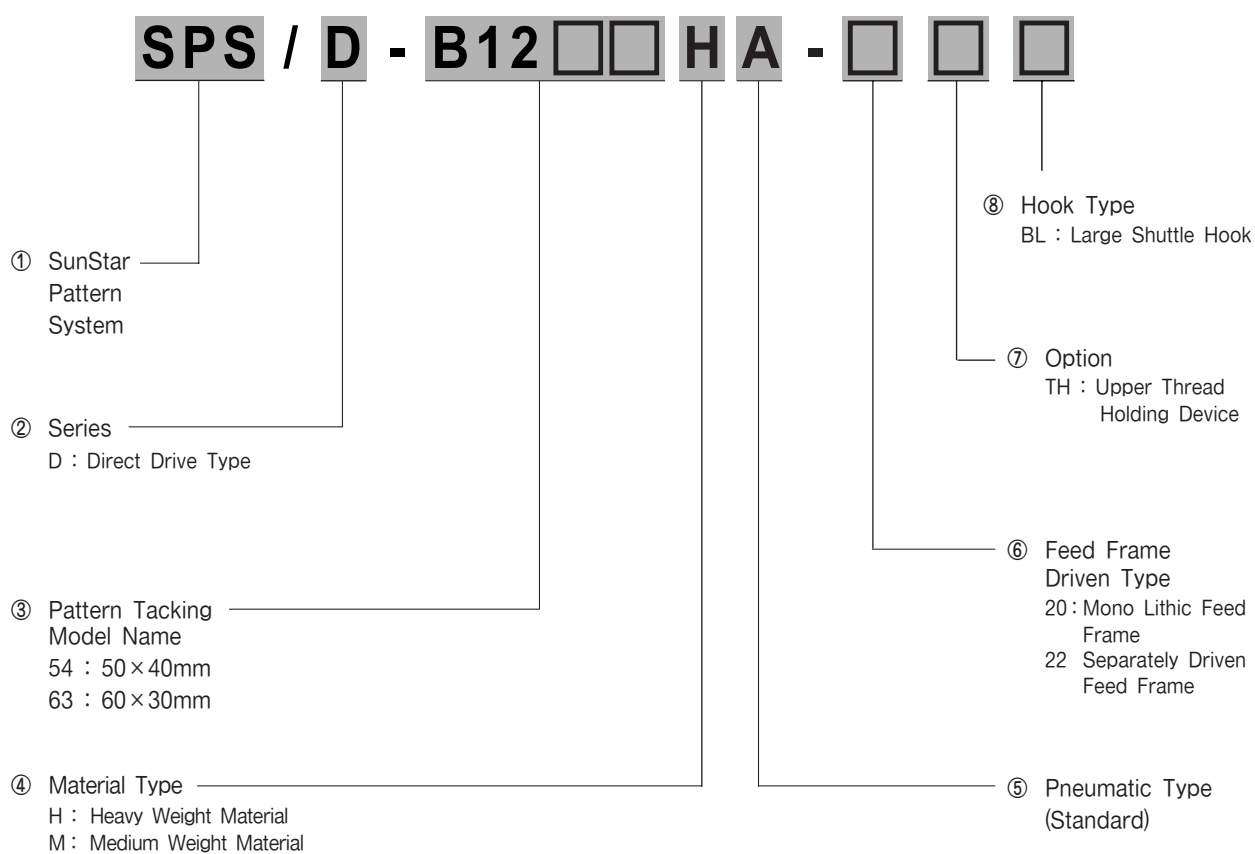


1. Thank you for purchasing our product. Based on the rich expertise and experience accumulated in industrial sewing machine production, SUNSTAR will manufacture industrial sewing machines, which deliver more diverse functions, high performance, powerful operation, enhanced durability, and more sophisticated design to meet a number of user's needs.
2. Please read this user's manual thoroughly before using the machine. Make sure to properly use the machine to enjoy its full performance.
3. The specifications of the machine are subject to change, aimed to enhance product performance, without prior notice.
4. This product is designed, manufactured, and sold as an industrial sewing machine. It should not be used for other than industrial purpose.



SUNSTAR MACHINERY CO., LTD.

Organization of the Pattern Tacking S/M MODEL



Contents

1. Machine Safety Regulations	6
1) Machine Transportation	6
2) Machine Installation	6
3) Machine Repair	6
4) Machine Operation	7
5) Devices for Safety	7
6) Caution Mark Position	8
7) Contents of Marks	8
2. Machine Specifications	9
3. Machine Structure	10
1) Names of Each Part of the Machine	10
4. Machine Installation	11
1) Machine Installation Conditions	11
2) Electric Installation Conditions	11
3) How to Install the Table	11
4) The Assembly of Peripheral Parts	14
5) Installation Method of Air Pressure Specifications	15
5. Preparations Before Operating the Machine	18
1) How to Supply Oil	18
2) How to Install the Needle Bar	19
3) How to Thread the Upper Thread	20
4) Threading the Lower Thread	20
5) How to Take the Bobbin Case On and Off	20
6) How to Adjust the Tension of the Upper Thread and the Lower Thread	21
7) How to Wind the Lower Thread	21
8) How to Operate a Pedal (□A-20 Type)	22
9) How to Operate a Pedal (□A-22 Type)	22
10) Disposing the Waste Oil	22
11) Compressed Air Input and Air Pressure Adjusting Method	23
12) Adjusting Method of Upper Thread Holding Device (Option)	23

6. How to Repair the Machine	24
1) Adjusting the Height of the Needle Bar	24
2) Adjusting the Needle and the Shuttle	24
3) Adjusting the Lower Shaft Gear and the Rocking Shaft Gear	25
4) Adjusting the Position of Shuttle Upper Spring	25
5) Adjusting the Height of the Feed Plate	26
6) Adjusting the Height of the Presser Foot Devices	26
7) Adjusting the Presser Foot Devices	26
8) Adjusting the Parts for Thread Release	28
9) Adjusting the Wiper Parts	30
10) Adjusting the Parts for Trimming	31
11) Adjusting the Devices for Main Thread Adjustment	33
12) Adjusting the Winder Devices	33
13) Adjusting the Hand Pulley Device	34
14) Mounting the Direct Motor and Adjusting Method	34
15) Setting Up the X-Y Origin	35
7. Cause of Breakdown and Troubleshooting	36
1) Machine Part	36
8. Pattern List	37
9. Drawing of Table	39
10. Gauge List	40
11. Pneumatic Diagram	43
1) Drawing of the Pneumatic Hose of SPS/D-B1254□A-20, SPS/D-B1263□A-20 Machine (for Monolithic Feed Frame)	43
2) Drawing of the Pneumatic Hose of SPS/D-B1254□A-22, SPS/D-B1263□A-22 Machine (for Separately Driven Feed Frame)	44

1

MACHINE SAFETY REGULATIONS




Safety instruction on this manual are defined as Danger, Warning and Notice.

If you do not keep the instructions, physical injury on the human body and machine damage might be occurred.

Danger : This indication should be observed definitely. If not, danger could be happen during the installation, conveyance and maintenance of machines.

Warning : When you keep this indication, injury from the machine can be prevented.

Notice : When you keep this indication, error on the machine can be prevented.

<p>1-1) Machine Transportation</p> 	<p>Those in charge of transporting the machine should know the safety regulations very well. The following indications should be followed when the machine is being transported.</p> <ul style="list-style-type: none"> Ⓐ More than 2 people must transport the machine. Ⓑ To prevent accidents from occurring during transportation, wipe off the oil on the machine well.
<p>1-2) Machine Installation</p> 	<p>The machine may not work well or breakdown if installed in certain places, install the machine where the following qualifications agree.</p> <ul style="list-style-type: none"> Ⓐ Remove the package and wrappings starting from the top. Take special notice on the mails on the wooden boxes. Ⓑ Dust and moisture stains and rusts the machine. Install an airconditioner and clean the machine regularly. Ⓒ Keep the machine out of the sun. Ⓓ Leave sufficient space of more than 50cm behind, and on the right and left side of the machine for repairing. Ⓔ EXPLOSION HAZARDS Do not operate in explosive atmospheres. To avoid explosion, do not operate this machine in an explosive atmosphere including a place where large quantities of aerosol spray product are being used or where oxygen is being administered unless it has been specifically certified for such operation. Ⓕ The machine were not provided with a local lighting due to the feature of machine. Therefore the illumination of the working area must be fulfilled by end user. [Refer] Details for machine installment are described in 4. Machine Installment.
<p>1-3) Machine Repair</p> 	<p>When the machine needs to be repaired, only the assigned troubleshooting engineer educated at the company should take charge.</p> <ul style="list-style-type: none"> Ⓐ Before cleaning or repairing the machine, close down the motive power and wait 4 minutes till the machine is completely out of power. Ⓑ Not any of the machine specifications or parts should be changed without consulting the company. Such changes may make the operation dangerous. Ⓒ Spare parts produced by the company should only be used for replacements. Ⓓ Put all the safety covers back on after the machine has been repaired.

1-4) Machine Operation



SPS/D-B1254(B1263) Series is made to sew patterns on fabrics and other similar material for manufacturing. Follow the following indications when operating the machine.

- Ⓐ Read through this manual carefully and completely before operating the machine.
- Ⓑ Wear the proper clothes for work.
- Ⓒ Keep hands or other parts of the body away from the machine operation parts (needle, shuttle, thread take-up lever, and pulley etc.) when the machine is being operated.
- Ⓓ Keep the covers and safety plates on the machine during operation.
- Ⓔ Be sure to connect the earthing conductor.
- Ⓕ Close down the electric motive power and check if the switch is turned “off” before opening electric boxes such as the control box.
- Ⓖ Stop the machine before threading the needle or checking after work.
- Ⓗ Do not step on the pedal when turning the power on.
- Ⓘ Do not operate the machine with any cooling fan blocked.
The air-filter on control box must be cleaned once a week.
- ⓷ If possible, install the machine away from source of strong electrical noise such as high frequency welding machines

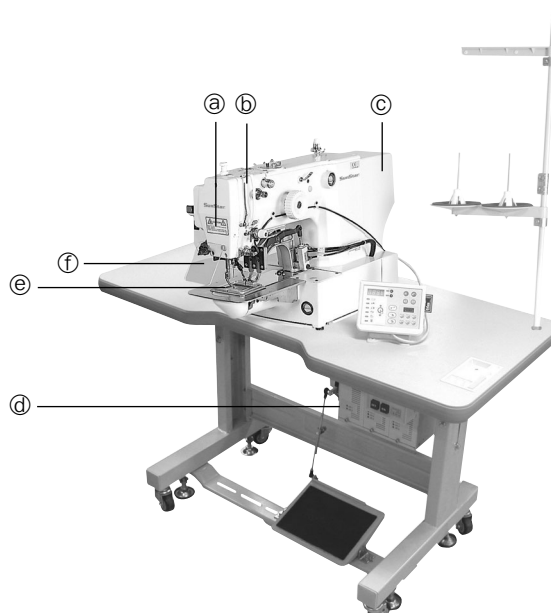


Belt will crush or amputate finger or hand, keep cover in place before operating, turn off power before inspecting or adjusting.

1-5) Devices for safety



- Ⓐ Safety label : It describes cautions during operating the machine.
- Ⓑ Thread take-up cover : It prevents from any contact between body and take-up lever.
- Ⓒ Motor cover : It prevents from insertion of hands, feet or clothes by motor.
- Ⓓ Label for specification of power : It describes caution for safety to protect against electric shock during rotation the motors.
- Ⓔ Finger guard : It prevent from contacts between a finger and needle.
- Ⓕ Safety plate : It protect eyes against needle breaks.



1-6) Caution Mark Position

Caution mark is attached on the machine for safety.
When you operate the machine, observe the directions on the mark.

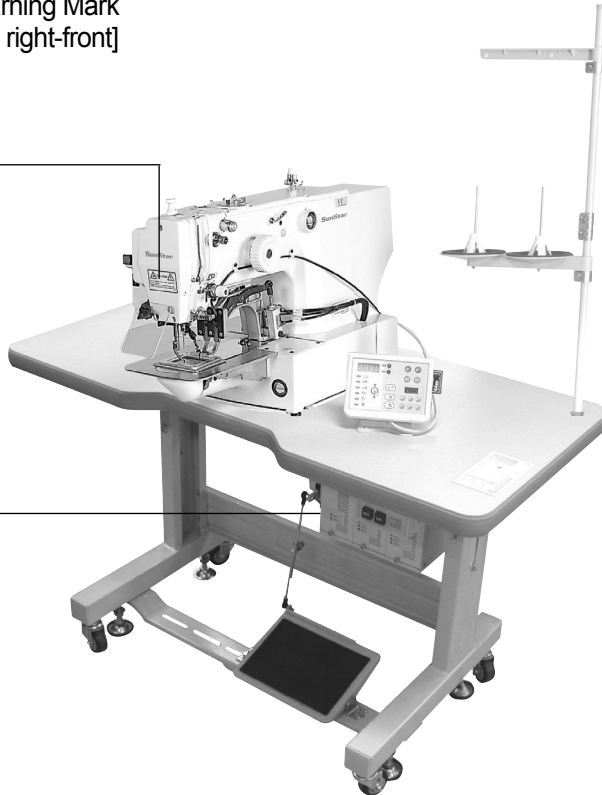
Position of Warning Mark
[View from the right-front]

CAUTION
주 의

Do not operate without finger guard and safety devices. Before threading, changing bobbin and needle, cleaning etc. switch off main switch.
손가락 보호대와 안전장치 없이 작동하지 마십시오.
실, 보빈, 바늘교환시나 청소전에는 반드시 주전원의 스위치를 꺼 주십시오.

WARNING
경 고

Hazardous voltage will cause injury. Be sure to wait at least 360 seconds before opening this cover after turn off main switch and unplugging a power cord.
고압 전류에 의해 감전될 수 있으므로 커버를 열 때는 전원을 내리고 전원 플러그를 뽑고 나서 360초간 기다린 후 여십시오.



1-7) Contents of Marks



Caution

1)

CAUTION
주 의

Do not operate without finger guard and safety devices. Before threading, changing bobbin and needle, cleaning etc. switch off main switch.
손가락 보호대와 안전장치 없이 작동하지 마십시오.
실, 보빈, 바늘교환시나 청소전에는 반드시 주전원의 스위치를 꺼 주십시오.

2)

WARNING
경 고

Hazardous voltage will cause injury. Be sure to wait at least 360 seconds before opening this cover after turn off main switch and unplugging a power cord.
고압 전류에 의해 감전될 수 있으므로 커버를 열 때는 전원을 내리고 전원 플러그를 뽑고 나서 360초간 기다린 후 여십시오.

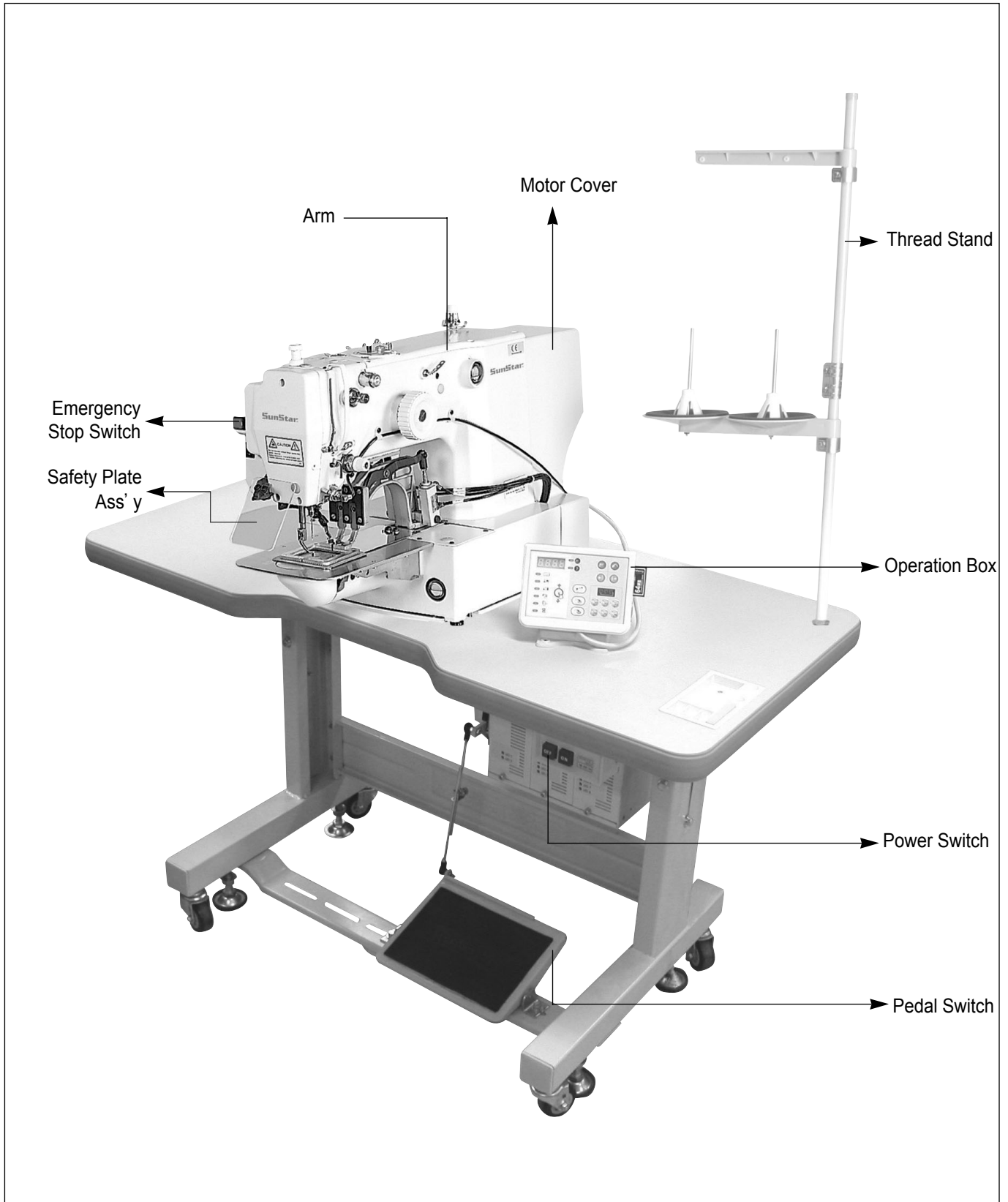
MACHINE SPECIFICATIONS

MODEL	SPS/D-B1254□□				SPS/D-B1263□□			
	HA	HA-BL	MA	MA-BL	HA	HA-BL	MA	MA-BL
Application	For Heavy Weight Materials		For Medium Weight Materials		For Heavy Weight Materials		For Medium Weight Materials	
Sewing Area(X, Y)	50mm × 40mm				60mm × 30mm			
Sewing Speed	Max. 2,500spm (Stitch Length is 3mm or Less)							
Stitch Length	0.1~10mm							
Feeding System	Feeding by Pulse Motor							
Stroke	41.2mm							
Hook	Standard Shuttle Hook	Large shuttle hook	Standard Shuttle Hook	Large shuttle hook	Standard Shuttle Hook	Large shuttle hook	Standard Shuttle Hook	Large shuttle hook
Needle	DP × 17 #19 (#19~#23)		DP × 5 #16		DP × 17 #19 (#19~#23)		DP × 5 #16	
Lifting Amount of Feeding Frame	Max. 20mm							
Lifting Amount of Presser Foot	Max. 20mm							
Thread Trimmer	Standard							
Emergency Stop Switch	Standard							
Wiper	Standard (Electronically Solenoid Type)							
No. of Stitches	Max. 10,000 Stitches							
Standard No. of Patterns	56 Patterns (Pattern : 24, Bartack : 32)							
Number of Patterns	Max. 99 Patterns (Standard 56 Patterns)							
Memory	EP-ROM							
Enlarging/Reducing	20%~ 200% (1% Step)							
Motor	Direct Drive AC Sero Motor							
Power Consumption	600VA							
Recommended Temperature	5° C~40° C							
Recommended Humidity	20%~ 80%							
Power	1-Phase: 100V~240V, 3-Phases 200V~440V, 50/60Hz							
Airborne Noise Humidity	0.49MPa (5kgf/cm ²)							

3

MACHINE STRUCTURE

1) Names of Each Part of the Machine



4

MACHINE INSTALLATION

1) Machine Installation Conditions

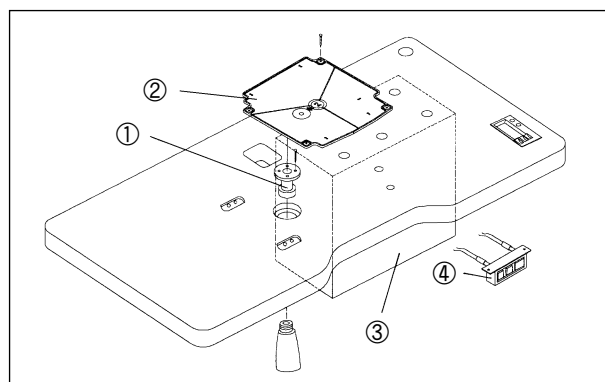
- A. Do not use the machine where the voltage is over regular voltage $\pm 10\%$ to prevent accidents
- B. For safe operation of the machine, use the machine under the following conditions.
 - ⇨ Surrounding Temperature During Operation : $5^{\circ} \sim 40^{\circ}\text{C}$ ($41^{\circ}\text{F} \sim 104^{\circ}\text{F}$)
 - ⇨ Surrounding Temperature During Maintenance : $-10^{\circ} \sim 60^{\circ}\text{C}$ ($14^{\circ}\text{F} \sim 140^{\circ}\text{F}$)
- C. Humidity : Between 20~80%(Relative humidity)

2) Electric Installation Conditions

- A. Power Voltage
 - The power voltage must be between regular voltage $\pm 10\%$
 - The frequency of the power should be regular frequency($50/60\text{Hz}$) $\pm 1\%$
- B. Electromagnetic Wave Noise
Use separate power with strong magnetics of high frequency products, and do not leave the machine near them.
- C. Use low voltage when supplements or accessories are being adhered.
- D. Be careful not to have water or coffee be spilled into the Controller and Motor.
- E. Do not drop the Controller or Motor.

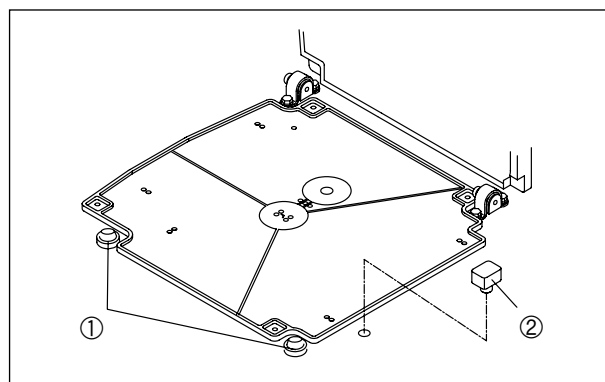
3) How to Install the Table

- A. Please fix the oil tub support ①, the oil support ②, the control box ③ and the power switch ④ on the table.



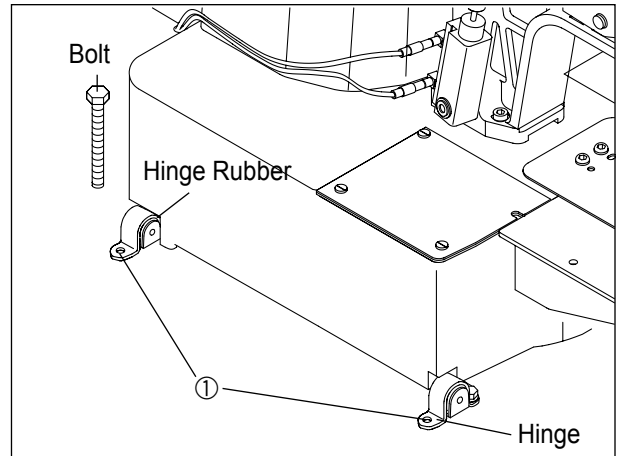
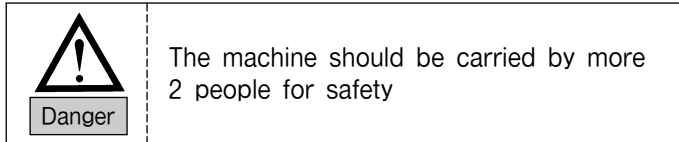
[Fig. 1]

- B. Attach the bed cushion rubber ① and safety switch supporting rubber ② to the table.



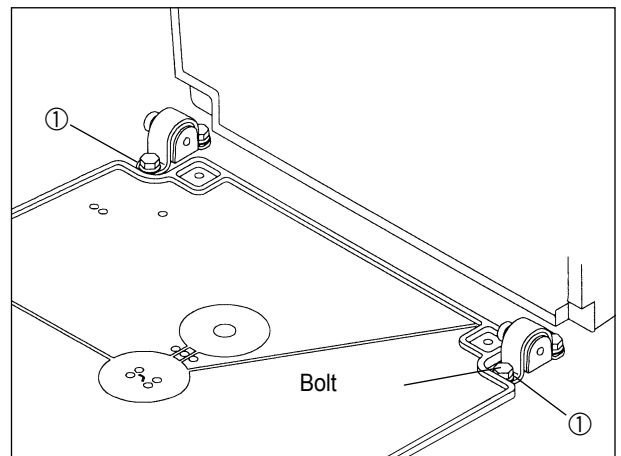
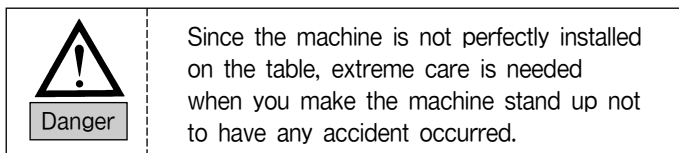
[Fig. 2]

- C. Add the hinge metal and hinge rubber to the bed.
Then insert the fixing bolt into the hinge metal hole of point ① and fix the table as shown in the picture.



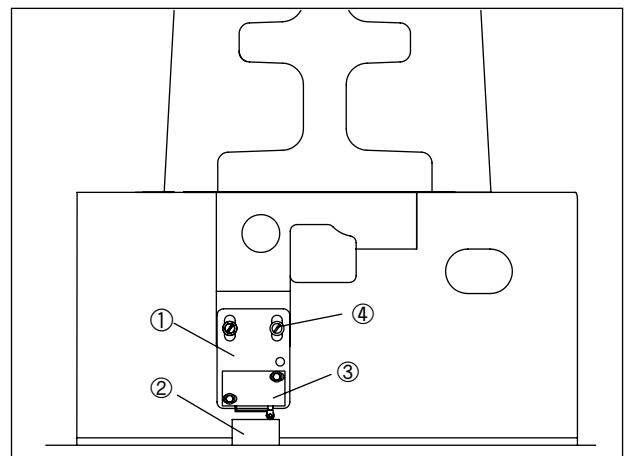
[Fig. 3]

- D. Stand the machine as shown in the picture, and then fix the machine on the table after inserting the fixing bolts into the hinge metal holes of point ①.



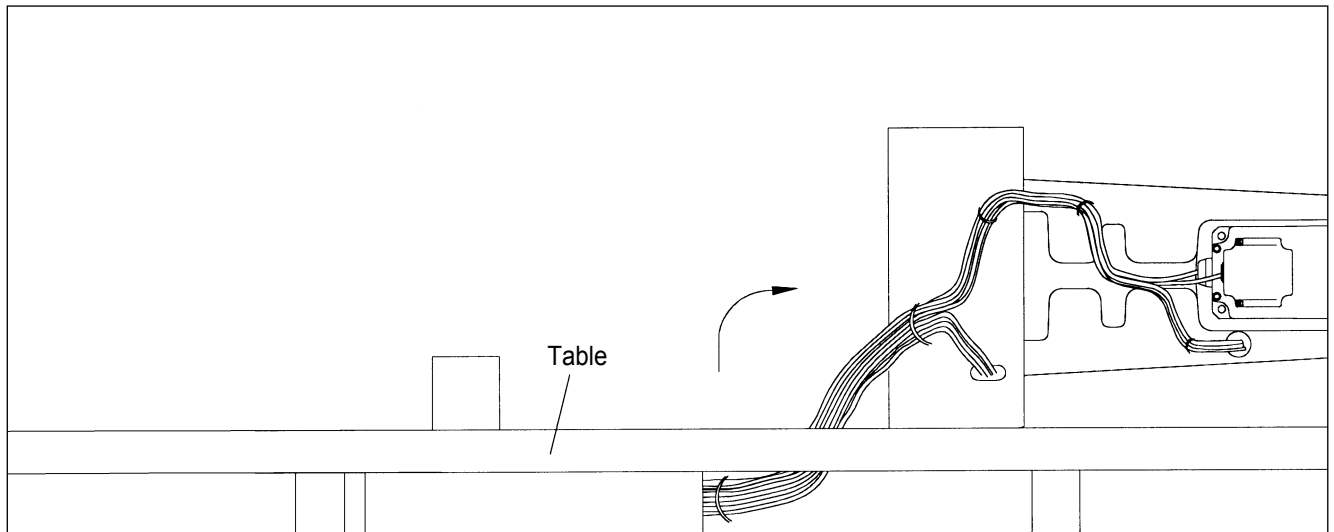
[Fig. 4]

- E. Assemble the safety switch bracket ① on the bed as in the figure. Move the safety switch bracket up and down to make sure that the safety switch supporting rubber ② is tightly pressed by the safety switch ③, and then fasten the screw ④.



[Fig. 5]

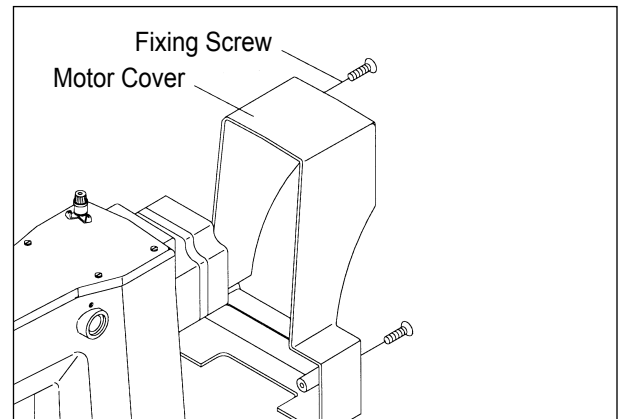
- F. After the cable connections between the machine and the control box is finished, fix the cable wiring under the table as shown in the picture.
(Adjust the length of the wire considering the situation of standing the machine.)



[Fig. 6]

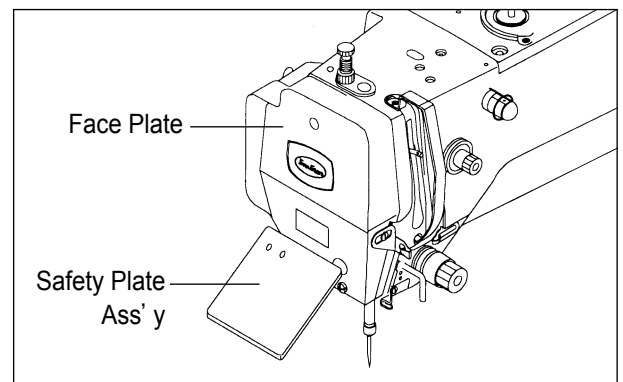
4) The Assembly of Peripheral Parts

- A. Attach the motor cover on the back side of the machine (4 positions) by using the 4 joint screws.



[Fig. 7]

- B. Attach the safety plate to the left side of machine by using fixing bolt.

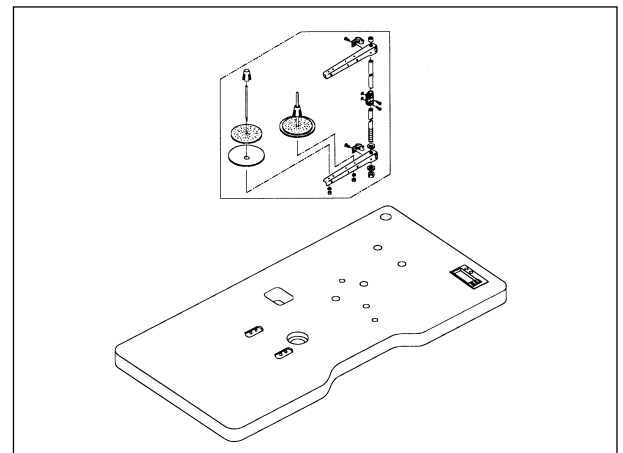


[Fig. 8]



For safety, motor cover and safety plate should be attached to the machine.

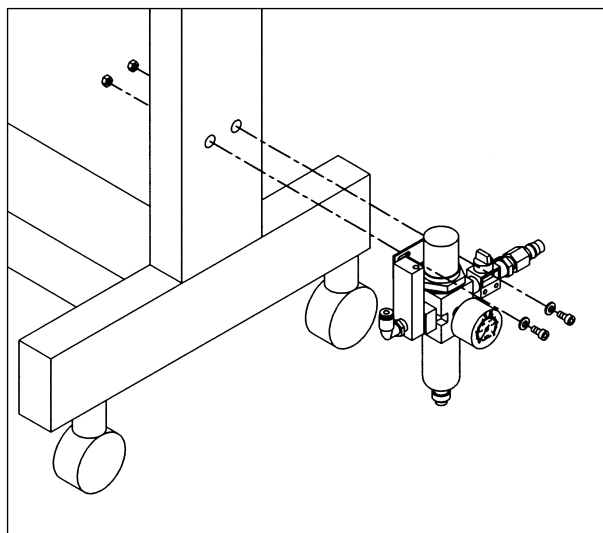
- C. Install the thread stand on the table.



[Fig. 9]

5) Installation Method of Air Pressure Specifications

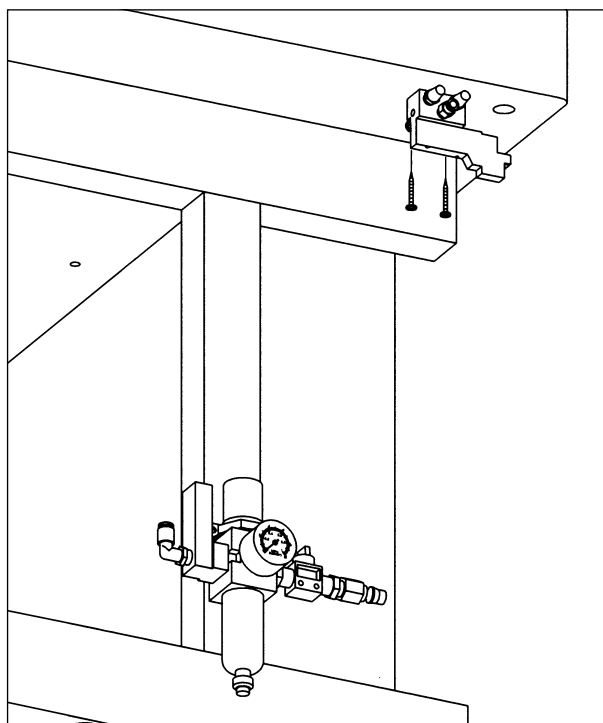
- A. Assembly method of filter regulator attach to right side of the table leg by using a bolt as shown in the figure.



[Fig. 10]

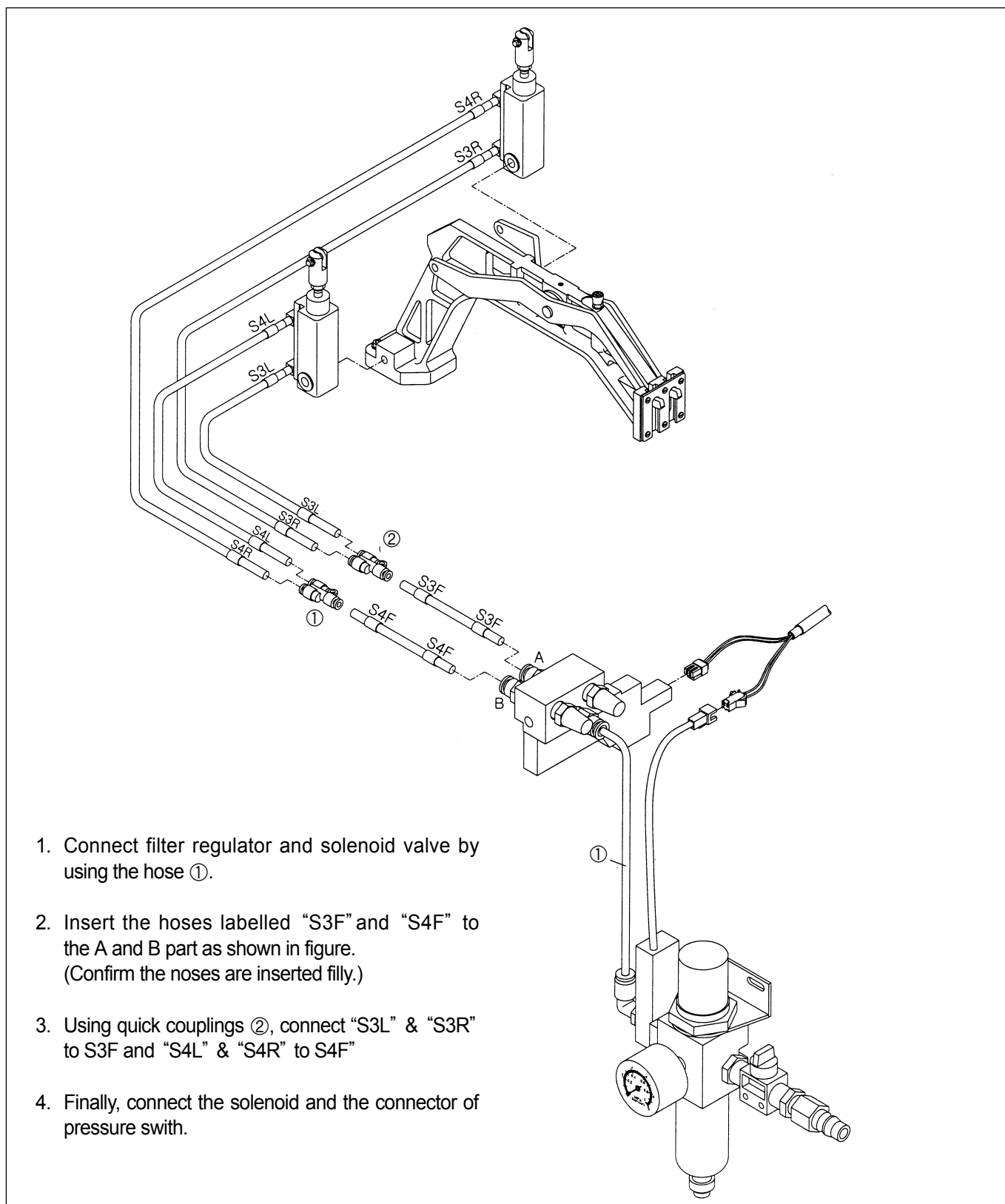
- B. Assembly method of solenoid valve

Fix it tightly at the proper location of the table bottom by using the fixing screw.



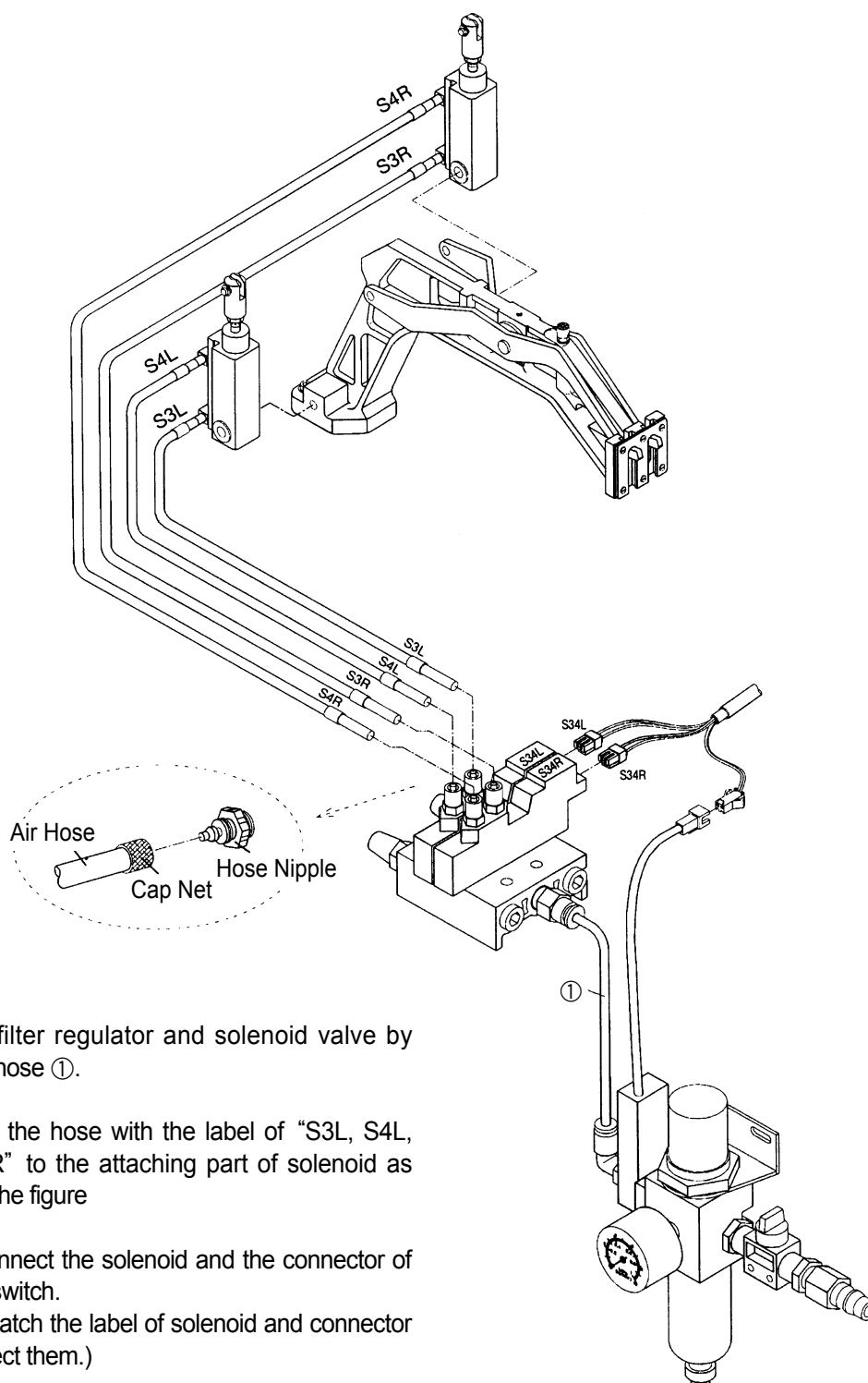
[Fig. 11]

C. How to connect the pneumatic hoses of monolithic feed frame machine (for SPS/D-B1254□A-20 / B1263□A-20 machine)



[Fig. 12]

D. How to connect the pneumatic hoses of the separately driven feed frame machine
(for SPS/D-B1254□A-22 / B1263□A-22 machine)



[Fig. 13]

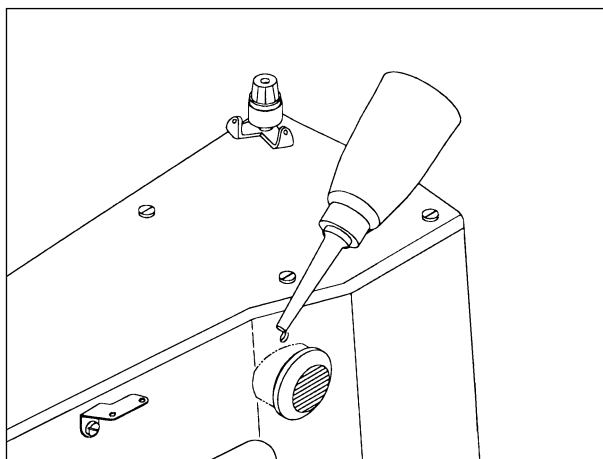
1) How to Supply Oil

- A. Check the amount of oil left in the oil tank which is installed on the arm and supply oil sufficiently.



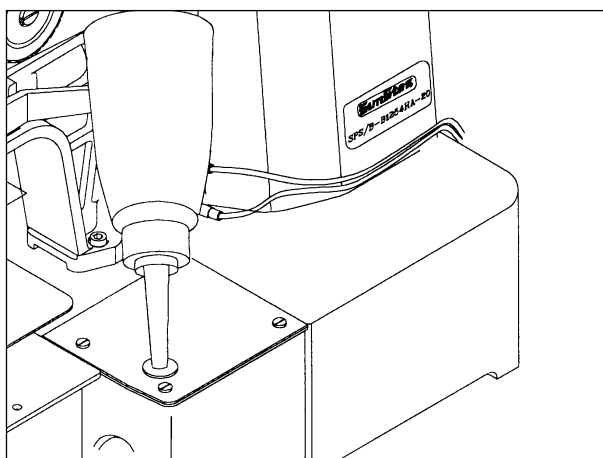
Caution

Be sure to supply oil when operating the machine for the first time and when the machine has not been used for a long time.



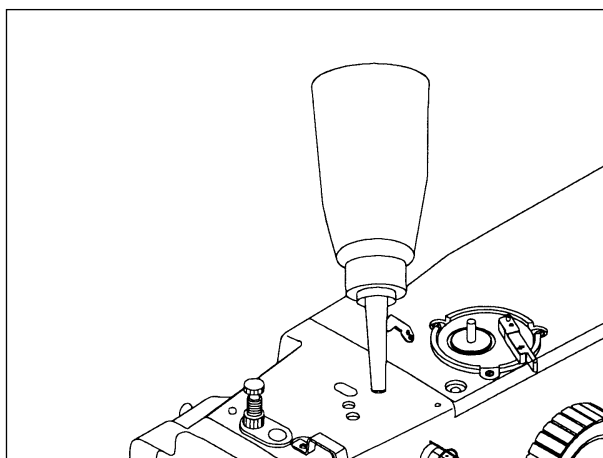
[Fig. 15]

- B. Check the remained amount of oil from the right window(Oil gauge window) of oil tank installed on the bed as seen in the figure, then supply oil enough through the lubrication hole on the bed cover.



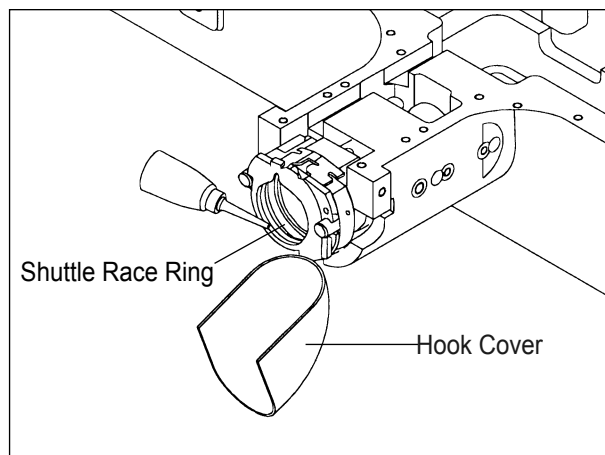
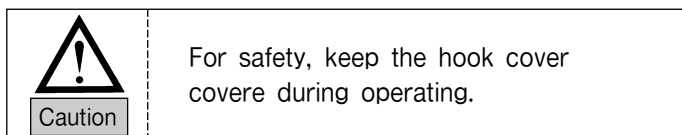
[Fig. 16]

- C. Supply oil into the hole in the upper part of the arm.



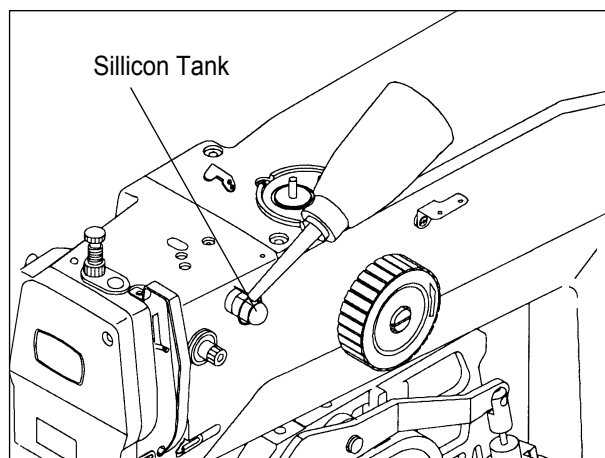
[Fig. 17]

- D. Open the hook cover and supply oil till the shuttle race ring is surrounded by oil. Put the hook cover back on after finishing.



[Fig. 18]

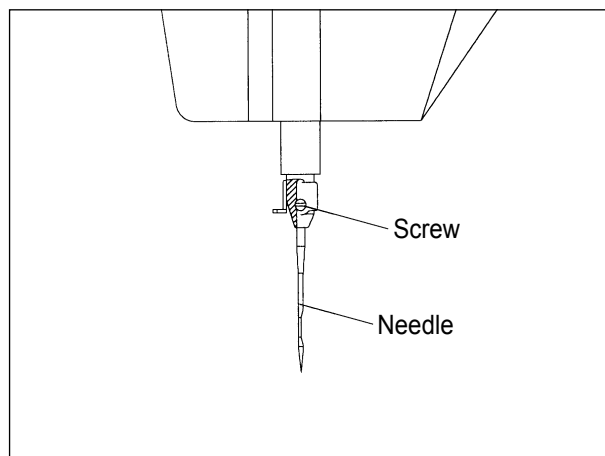
- E. Supply silicon oil into the silicon oil tank which is installed on the right side of the arm.



[Fig. 19]

2) How to Install the Needle Bar

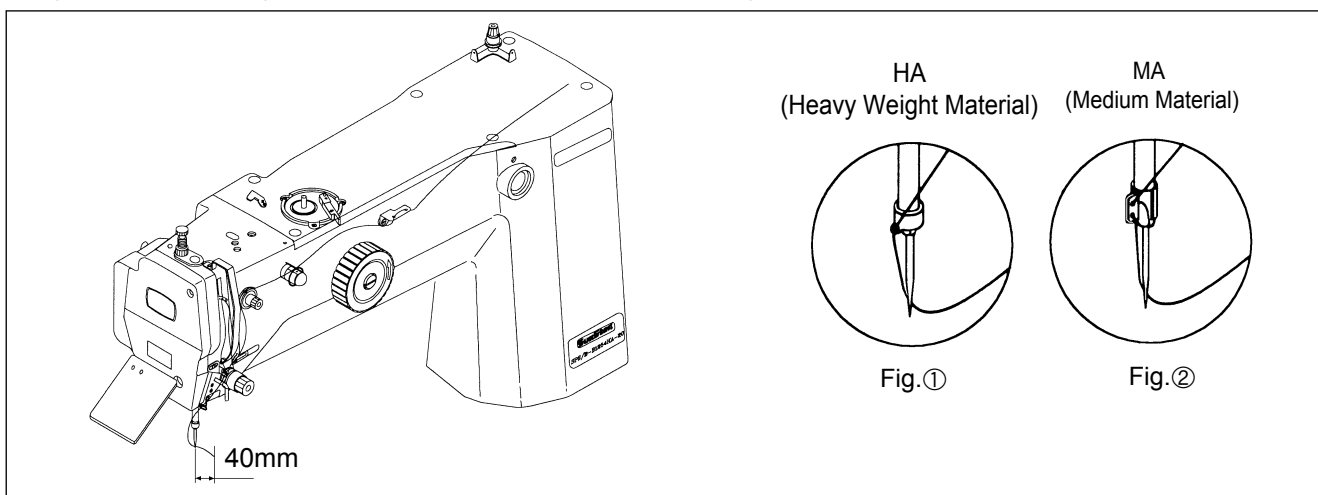
Unfasten the needle fixing screw on the needle bar. Then, with the needle groove facing forward, push the needle until the upper end touches the needle hole of the needle bar. Fix the needle in with the needle fixing screw.



[Fig. 20]

3) How to Thread the Upper Thread

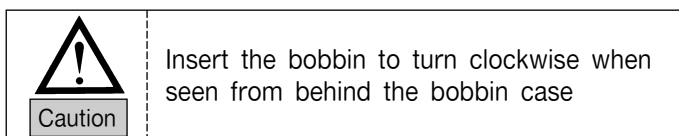
After placing the thread take-up lever on the top position, hang the upper thread as shown in the Figure. Concerning the thread guide of the needle bar, hang thread to use for heavy weight material as shown in Fig.① and hang thread to use for general and thin knit material as shown in Fig. ②.



[Fig. 21]

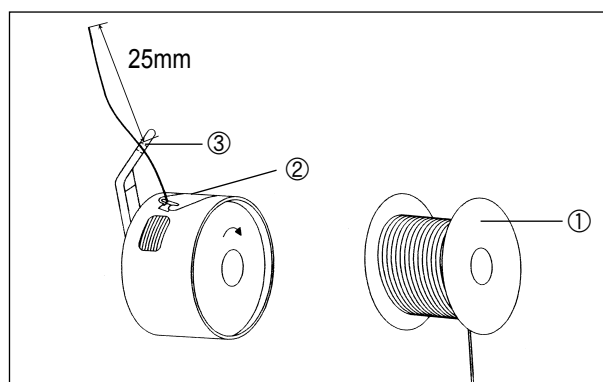
4) Threading the Lower Thread

A. Insert bobbin ① into bobbin case ② as shown in the picture.



B. After setting the lower thread through the crack of the bobbin case, insert the thread through thread hole ③.

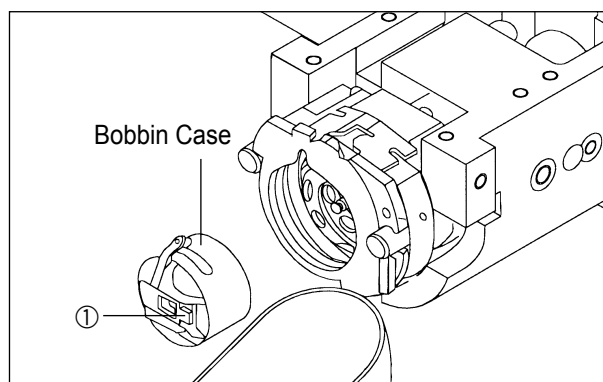
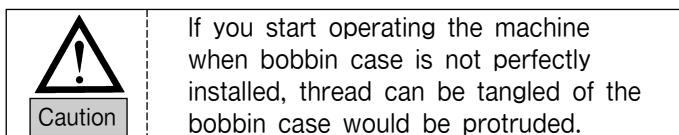
C. Adjust the lower thread to hang 25mm out of thread hole ③.



[Fig. 22]

5) How to Take the Bobbin Case On and Off

Opening the hook cover, hold the knob ① of bobbin case and push into the shuttle until sounding.

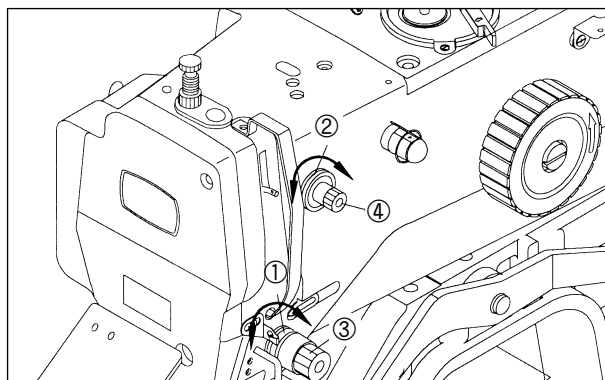


[Fig. 23]

6) How to Adjust the Tension of the Upper Thread and the Lower Thread

A. Adjusting the tension of the upper

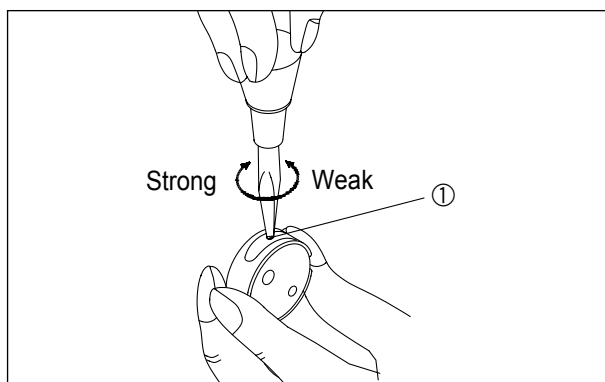
Thread When the tension adjusting nuts ③ and ④, of thread tension adjusting unit ① and sub-tension adjusting unit ②, are turned clockwise the upper thread is tightened. And loosens when turned the other way around.



[Fig. 24]


B. Adjusting the tension of the lower

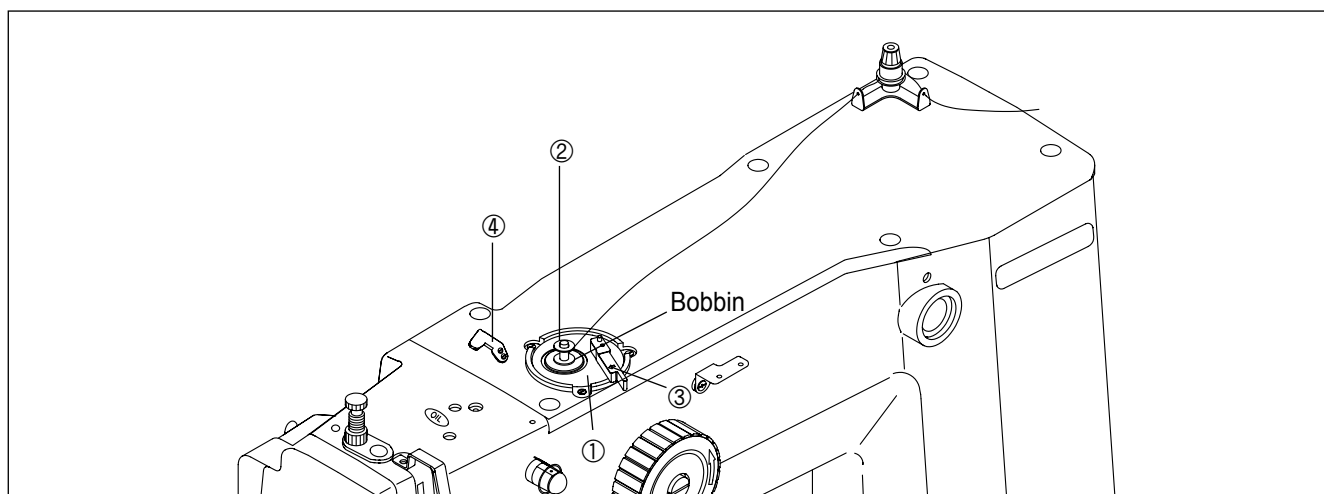
Thread the lower thread becomes tight when tension adjusting screw ① is turned clockwise, as shown in the picture. When the screw is turned the other way the lower thread is loosened.



[Fig. 25]

7) How to Wind the Lower Thread

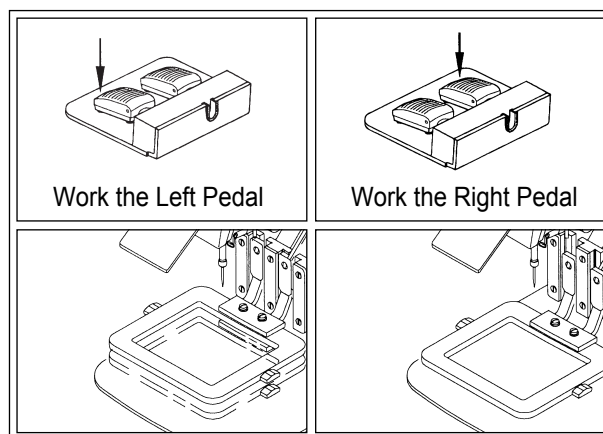
- Press **SELECT** and select  **WINDER** in the operation box.
- Insert the thread winder basis ① attached on the upper cap of the bobbin into the thread winder drive shaft ②.
- Adhere the thread winder lever ③ closely to the bobbin, and operate the machine by pressing the pedal.
- After separating the thread winder lever from the bobbin, cut off thread of the bobbin using the thread winder mes ④.



[Fig. 26]

8) How to Operate a Pedal (□A-20 Type)

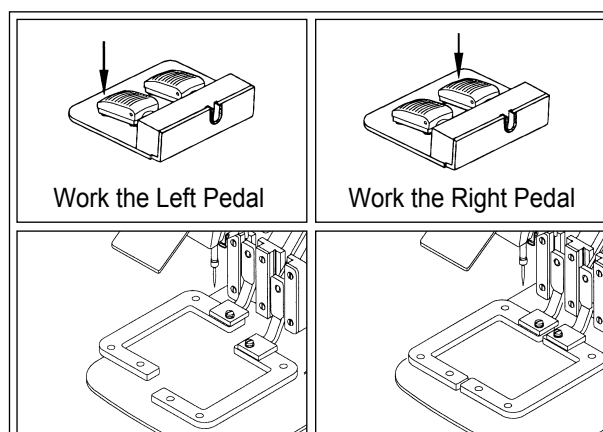
- A. After providing with the pedal switch of 2 pressing plates, install it a proper position to work conveniently.
- B. When you are pressing the right pedal the feed plate is lowering down, and when you press it again, the feed plate starts rising.
- C. In the status that the feed plate is lowered you press the left pedal, It starts sewing, and when the sewing is finished, the feed plate starts rising.



[Fig. 27]

9) How to Operate a Pedal (□A-22 Type)

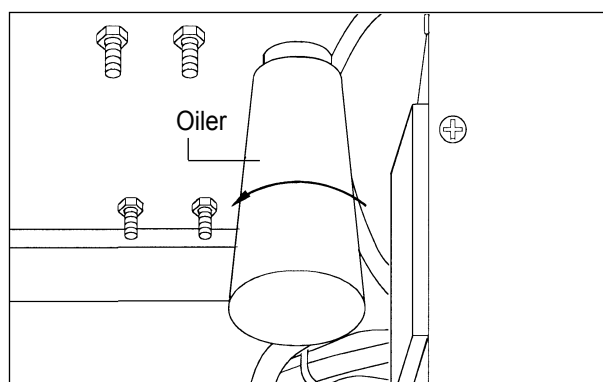
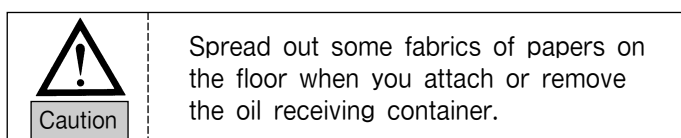
- A. It provides with the pedal switch of 2 pressing plates. Install it a proper position to work conveniently.
- B. When you are pressing the right pedal, the right feed plate is lowering down, and when you press it again, it starts rising.
- C. When you press a step on the left pedal, the left feed plate starts lowering, and when you take off your foot, it starts rising again.
- D. In the status that the right feed plate is lowered you press a step on the left pedal, the left feed plate starts lowering, and when you press a second step, it starts sewing. When the sewing is finished, the left and right feed plates start rising automatically.
- E. Please refer to Page 18 in the electrical and electronic manual concerning how to change the parameters of the separate pedal.



[Fig. 28]

10) Disposing the Waste Oil

When the oil receiving oiler at the bottom of the table is full, take it off to empty.



[Fig. 29]

11) Compressed Air Input Air Pressure Adjusting Method



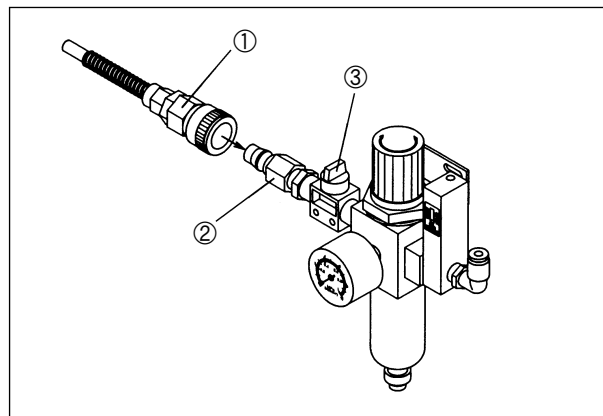
Note

Please Operate under power-off status for prevention of safety assiden.

- A. Please connect quick joint socket ① that pressed air was connected to the quick joint plug ② attached to the table.
- B. Open the finger valve ③ and input the pressed air.

[Reference]

If you close the finger valve after you use it, automatically discharge the remained air and the remained pressure is indicated as 0 MPa (0 kgf/cm²)



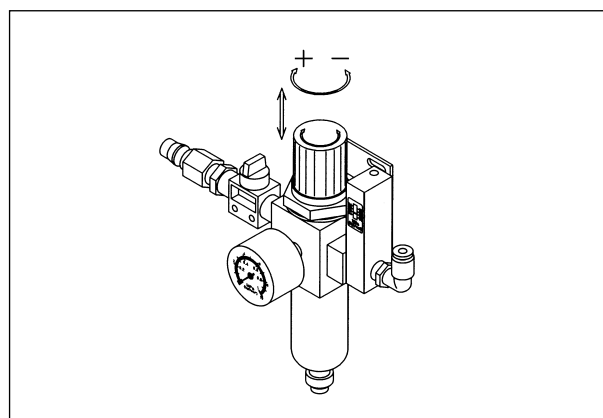
[Fig. 30]

- C. After pulling the adjusting handle located on the upper part of filter regulator as shown in the right figure, if you turn it to clockwise direction, the pressure rise and if you turn it to counter clockwise direction, the pressure drops. Therefore, after adjusting to the proper pressure 0.49~0.54MPa (5~5.5kgf/cm²) indicated on the pressure gauge, press the adjusting handle to the original location and fix it.



Note

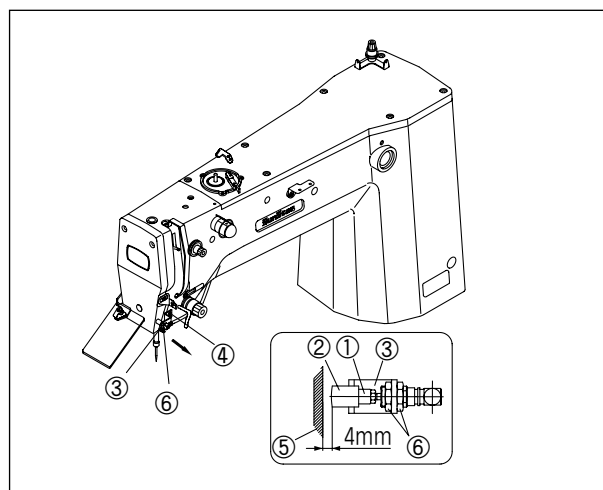
If the air pressure drops while using is (less than 4kgf/cm²), it shall be indicated as "error" and operation of the machine shall stop. [Er07]



[Fig. 31]

12) Adjusting Method of Upper Thread Holding Device (Option)

- A. Please confirm if upper thread holder pin cylinder knuckle ① and cap ② are located in the center of upper thread passage.
- B. If they are not located in the center, unfasten two pieces of joint screw ④ of upper thread holder pin cylinder bracket ③ and adjust to be located in the center. Then unfasten two joint screw ④ and adjust to be located in the center and fasten joint screw ④ tightly.
- C. Standard distance between end of knuckle cap ② and ARM ⑤ should be 4mm.
- D. In order to adjust this, unfasten two pin cylinder nut ⑥ and adjust distance of front and back. Then if adjustment is finished, fasten two nut ⑥ tightly.



[Fig. 32]

6

HOW TO REPAIR THE MACHINE

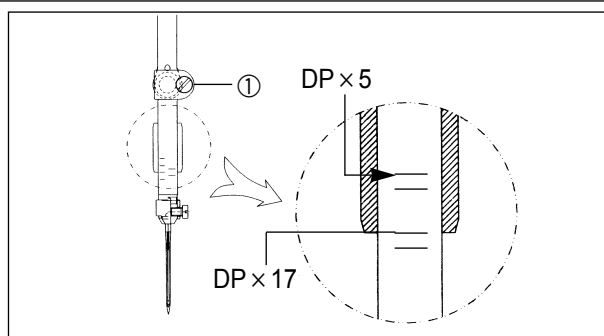


Caution

The machine is set to be the best condition at the factory. Do not make any discrete adjustments on the machine and replace genuine parts approved by the company only.

1) Adjusting the Height of the Needle Bar

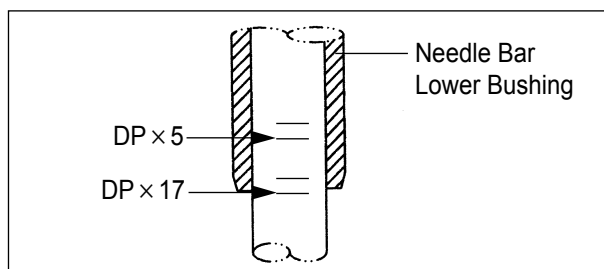
When the needle bar is at its lowest position, unfasten the needle bar holder screw ①. Adjust the desired height by making the specified upper carving line fit in with the needle bar bushing. Then, tighten the needle bar holder screw back in firmly.



[Fig. 33]

2) Adjusting the Needle and the Shuttle

A. Have the lower carving line for the needle that is applied when the needle bar goes up fit in with the lower side of the needle bar bushing as shown in the picture.



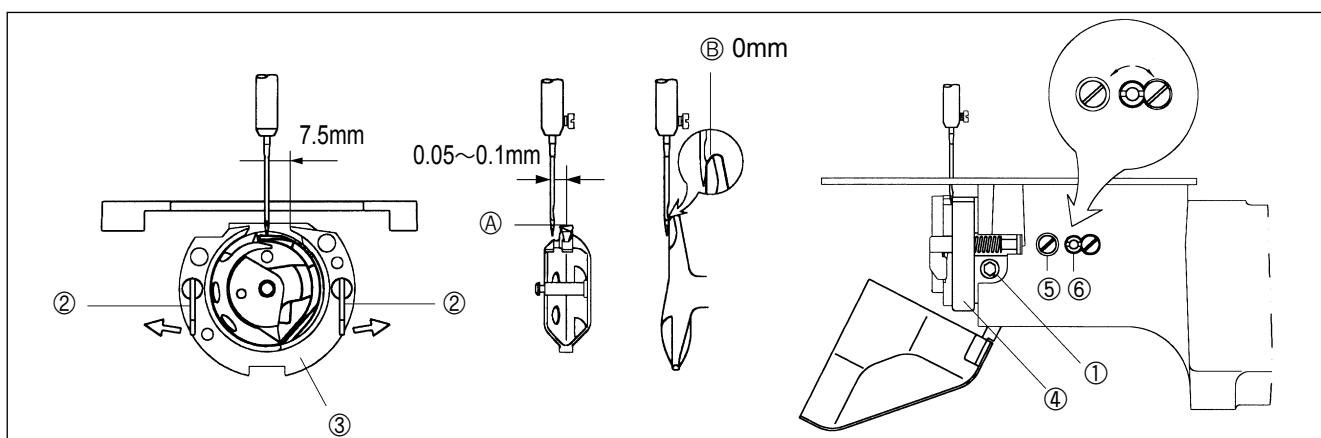
[Fig. 34]

- B. After unfastening the shuttle drive screw ①, open the inner hook pressure bar ② left to right and remove the shuttle race ring ③ from the (large) shuttle ④.
- C. Make the shuttle hook point ⑤ accord with the center of the needle. And make the needle and the front face of the shuttle drive ⑥ connect each other to prevent the needle from curving. Then, tighten the drive screw ① firmly.
- D. After unfastening the (large) shuttle screw ⑤, turn the large hook adjustment shaft ⑥ to the left to right and adjust the (large) shuttle ④ so that the needle and the shuttle hook point ⑤ is 0.05~0.1mm apart from each other.
- E. After adjusting the (large) shuttle ④ in place, adjust the rotary direction of the (large) shuttle ④ so the needle and the (large) shuttle ④ is 7.5mm apart from each other. Then, tighten the (large) shuttle screw ①.



Caution

For safety, make sure all the screws are tightened firmly after adjusting the (large) shuttle.



[Fig. 35]

3) Adjusting the Lower Shaft Gear and the Rocking Shaft Gear

- A. Unfasten screws ① and ②, ③
- B. While having the upper shaft turning, move the rocking shaft gear in the direction of the arrow to the position where it will move easily without load.



Caution

The machine may not operate when the rocking shaft gear is not in the right position.

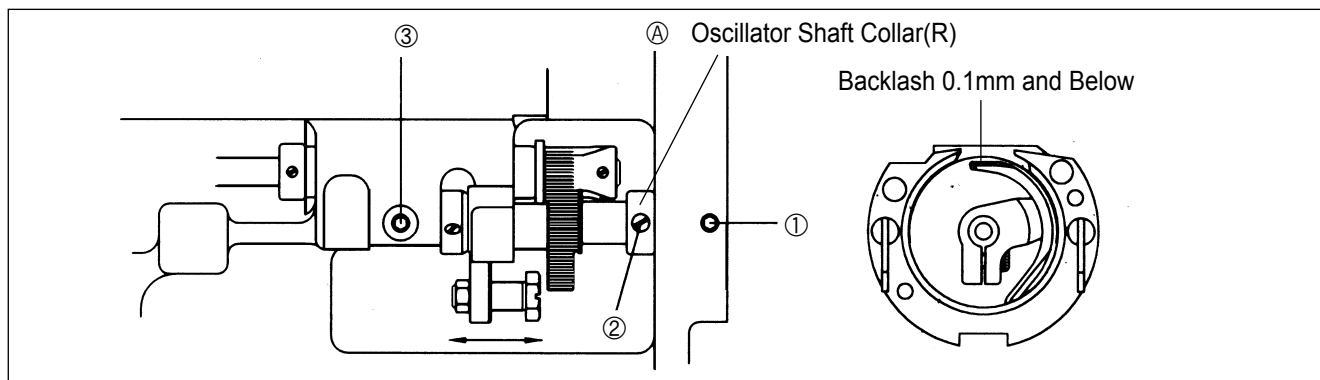
- C. Have the oscillator shaft collar (right) stick to the bed surface ①, and then tighten the collar screw.
- D. Turn the oscillator shaft collar (right), still sticking to the bed surface ①, in the direction of the arrow and make adjustments so the end of the shuttle drive will rotate smoothly with the backlash of under 0.1mm.



Caution

If there is too much backlash the machine may make more noise than usual during operation. And if there is not enough backlash, the machine may not operate.

- E. Tighten screw ① and ③ back on firmly.



[Fig. 36]

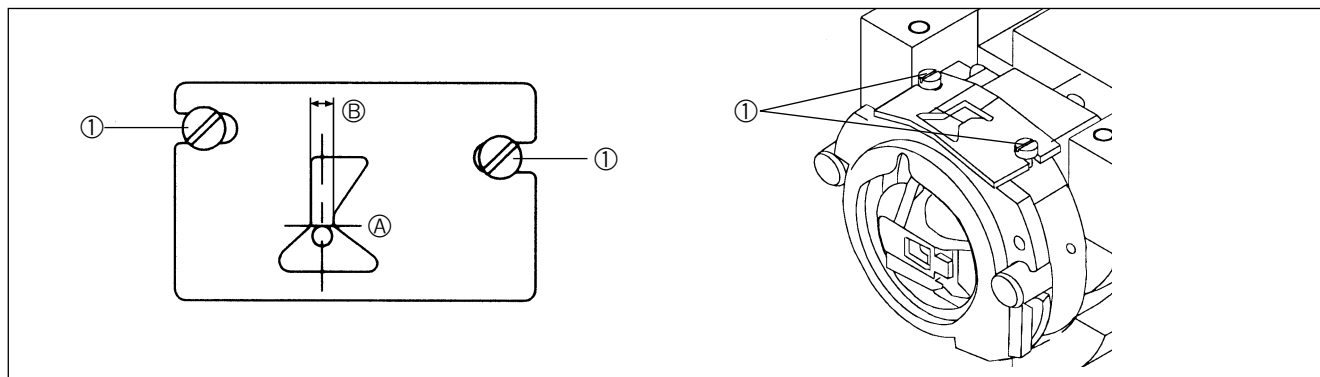
4) Adjusting the Position of Shuttle Upper Spring

After removing the lower feed plate and the needle plate from the machine, unfasten the screw of the shuttle upper spring. Then, adjust the shuttle upper spring so that the backside of the needle comes to point ① in the vertical direction, and the center of the needle will come to the middle of interval ② horizontally. After the adjustment is done, tighten the screw back on firmly.



Caution

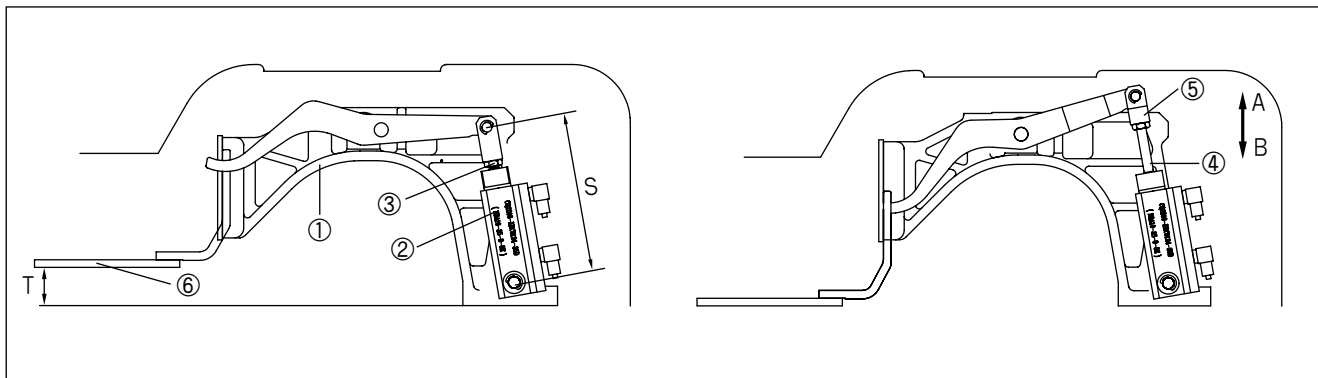
The thread may be disconnected or the thread strand may be unfastened if there are scratched or if the surface is rough around the shuttle upper spring. Always check the surface of the spring before operating the machine.



[Fig. 37]

5) Adjusting the Height of the Feed Plate.

Unfasten the cylinder knuckle joint nut ③ attached on the left and right cylinders ② on the feed bracket ①. And when you raise the cylinder knuckle ⑤ to direction A by rotating the cylinder shaft ④, the height(T) of the feed plate ⑥ is set up high, and when you lower the cylinder knuckle ⑤ to direction B by rotating the cylinder shaft ④, the height(T) of the feed plate ⑥ is set up lowly. Be sure to fix the cylinder knuckle joint nut tightly after adjusting the height of the feed plate ⑥.



[Fig. 38]

6) Adjusting the Height of the Presser Foot Devices

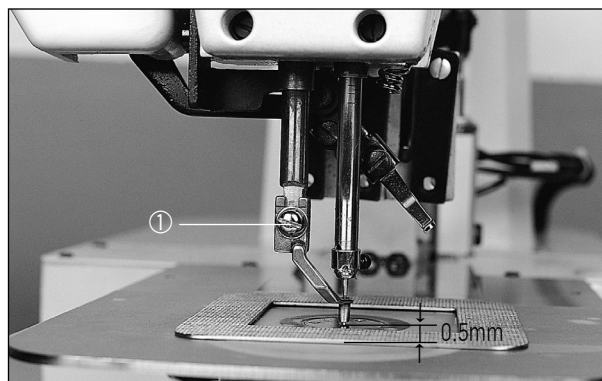
- A. Unfasten the presser foot joint screw ① at the lowest position of the needle bar.
- B. Adjust the height of the presser foot to correct the distance between the presser foot bottom surface and the sewing material to be 0.5mm (the thickness of using thread) and then fasten the joint screw.



Caution

Make sure to check the position of the wiper after adjusting the height of the presser foot.

- A flipping away shall be caused by a wide interval.
- A malfunction of the thread adjusting shall be caused by a narrow interval



[Fig. 39]

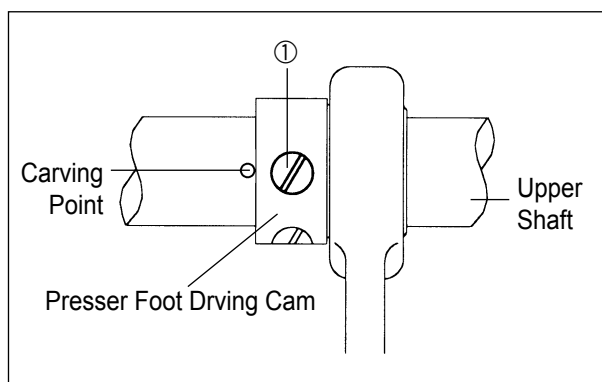
7) Adjusting the Presser Foot Devices

- A. Have the end of the presser foot drive cam accord with the carving point center of the upper shaft, and the line of the cam accord with the carving point.
Tighten screw ①.



Caution

If the presser foot drive cam is not in the right position, the presser foot may move vertically in time and run into needle bar.



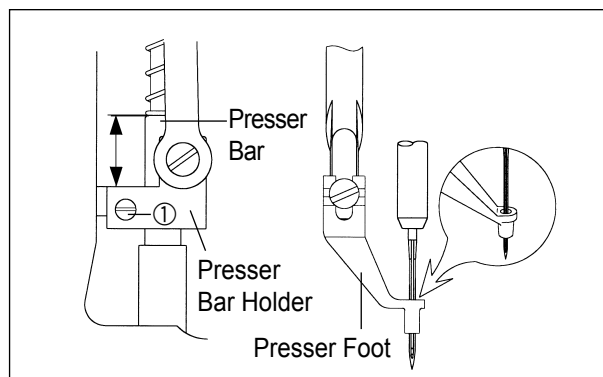
[Fig. 40]

B. Height Adjustment of Presser Bar

Adjust the presser bar that end of presser bar should come out about 17mm from presser bar handle and check if the needle passes through center of presser bar. If checking ends, fasten joint screw ①.



Fasten joint screw ① of presser bar with the pressure about 40~45kgf/cm². If connection pressure is excessive, it becomes cause of deformation of presser bar and cause trouble to machine operation.



[Fig. 41]

C. Adjustment of Presser Foot Adjusting Arm

- Unscrew location link stopper screw to make space between location link stopper ④ and fixing stud screw of presser foot motion link ③.
- After unscrewing fork link joint screw ① and placing stud screw of presser foot link to the right side of presser foot adjusting arm, fasten stud screw ② of presser foot link tightly.
- Place the needle bar to the lowest point by turning the hand pulley.
- Raise the presser bar so that the distance between presser bar handle and presser bar bush is to be 4mm and fasten the joint screw ① of fork link tightly.



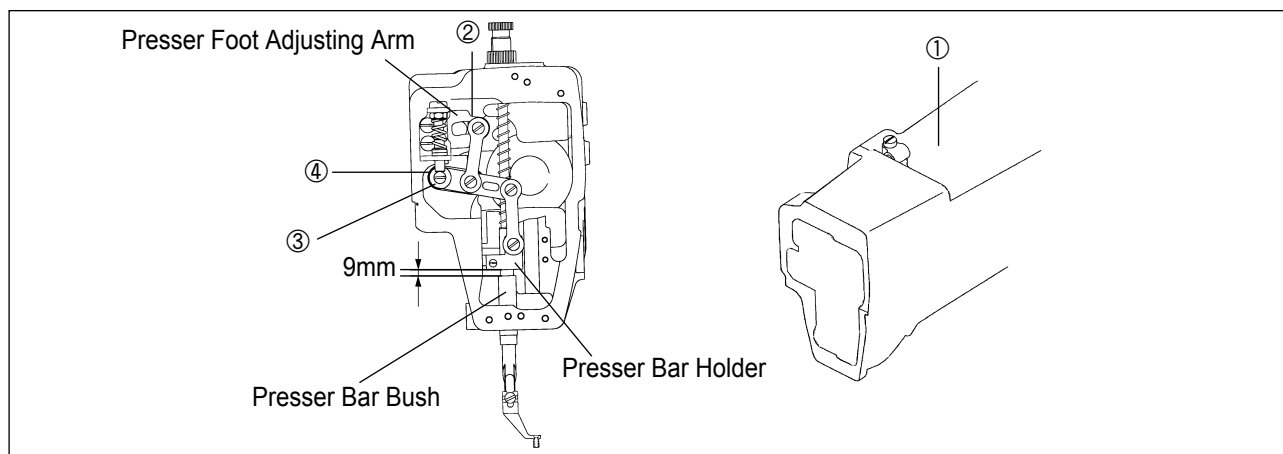
If there is space between presser bar handle and presser bar bush, interference and noise is occurring during machine operation, screws are not fastened tightly after adjustment; it can cause breakage during operation.

- Adjust so that location link stopper ④ and fixing stud screw of presser foot motion link ③ get close by turning stopper screw of location link.



If fixing stud screw ③ of presser foot motion link and end of the location link stopper ④ did not get perfectly close, trembling phenomenon occurs during operation and noise can increase.

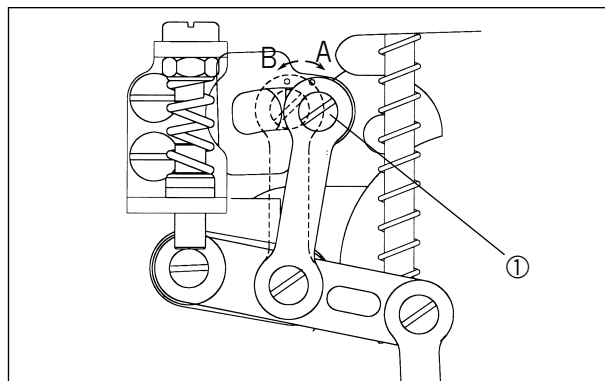
- After fastening fork link joint screw ① tightly, check if there is play to vertical direction in presser foot adjusting arm. Checking fastening status of screws, adjust presser foot stroke.



[Fig. 42]

D. Adjustment of Presser Foot Stroke(Adjustment of Presser Foot UP/DOWN Motion)

After unfastening stud screw ① of presser foot adjusting arm, placing it to A direction, presser foot stroke increases. Placing to direction B, stroke decreases. (It is set to 4mm at the moment of factory shipping).



[Fig. 43]

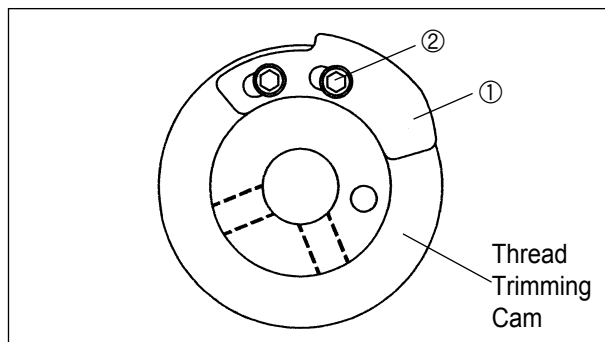
8) Adjusting the Parts for Thread Release

A. How to Set the Thread Release Notch

Place the notch so that the right side of the slot of the thread release notch ① touches circumference of the notch screw ②, and then fix with a screw.



The remaining amount of thread may not be enough or not be regular and the thread may be unfasten from the needle if the notch is not set in the right position.



[Fig. 44]

B. How to Set the Thread Release Stopper

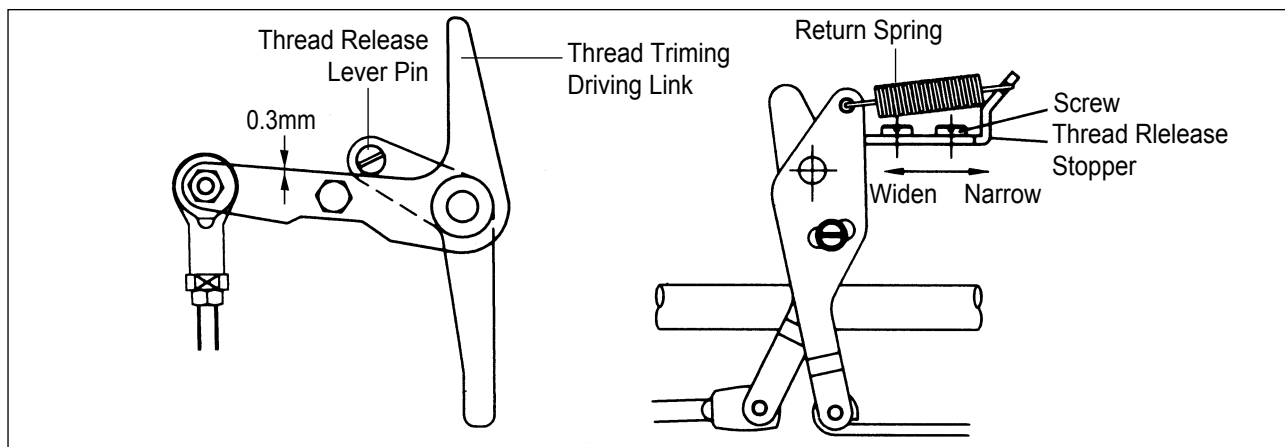
③ Remove the thread release return spring.

④ After unfastening the thread release stopper screw, adjust the trimming drive link and the thread release lever pin 0.3mm apart from each other. Then, attach the arm to the thread delay stopper completely. When the thread release stopper is pushed to the right, the space between the trimming drive link and the thread release lever pin is reduced. And it is enlarged when the stopper is pushed to the left.

⑤ Hang on the thread released return spring.



Use a tool when removing or attaching the thread delay spring to prevent accidents.



[Fig. 45]

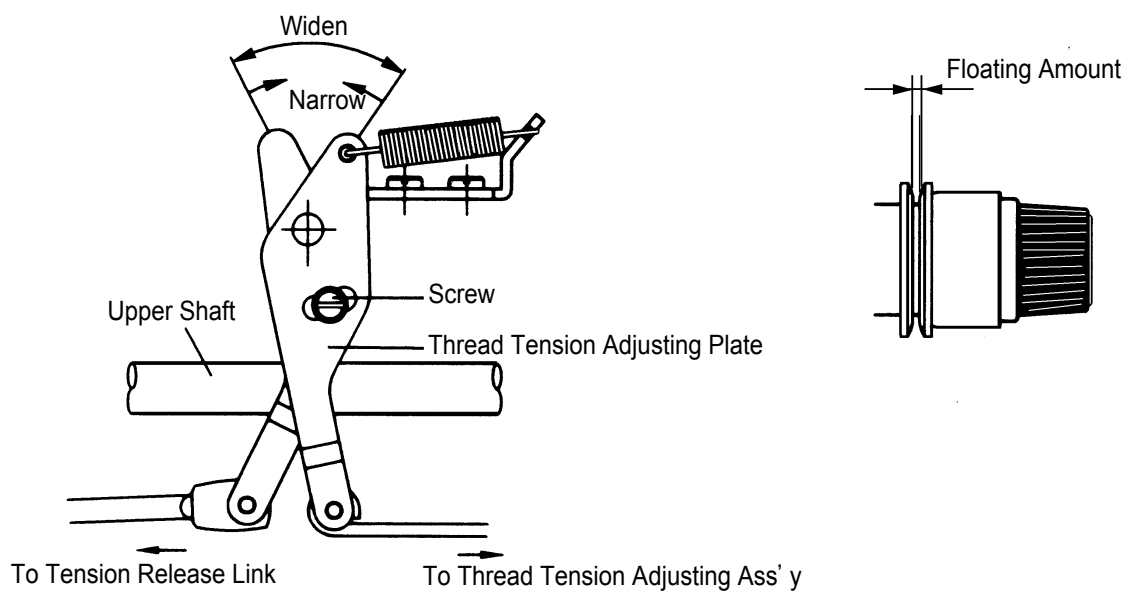
C. How to adjust the opening capacity of the thread guide disk

- ③ Unfasten the thread release adjusting plate screw.
- ④ Open the thread guide disk by operating the trimming devices.
- ⑤ Adjust the opening capacity to 0.6~0.8mm for normal material and 0.8~1mm for heavy material.
To increase the opening capacity, widen the angle between the thread release plate and narrow the angle to reduce the opening capacity.
- ⑥ Tighten the screw after the adjustment.



Caution

If the disk is not opened appropriately, the amount of remaining thread may be not enough or not regular, and the disk may not be closed completely.



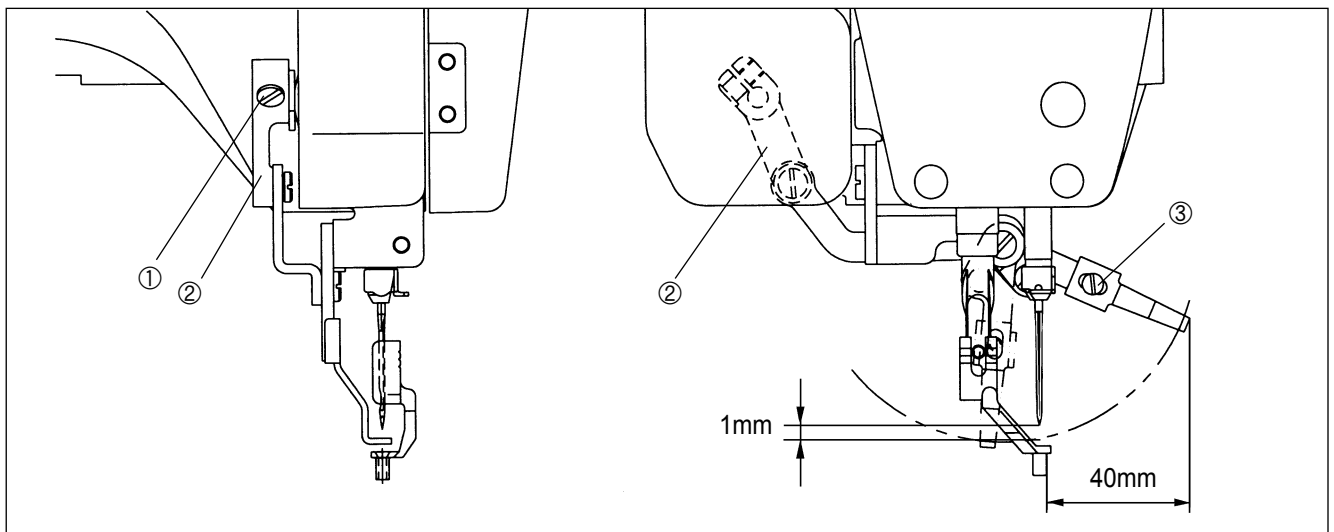
[Fig. 46]

9) Adjusting the Wiper Parts

- A. Unfasten the crank fixing screw ① when a needle is stopped upward.
- B. Adjust the wiper crank ② for wiper and needle to be apart from about 40mm
- C. Fasten the wiper crank fixing screw ①
- D. Unfasten the wiper fixing screw ③ and adjust it for wiper tail and needle tip to be apart from about 1mm, then fasten the wiper fixing screw ③.

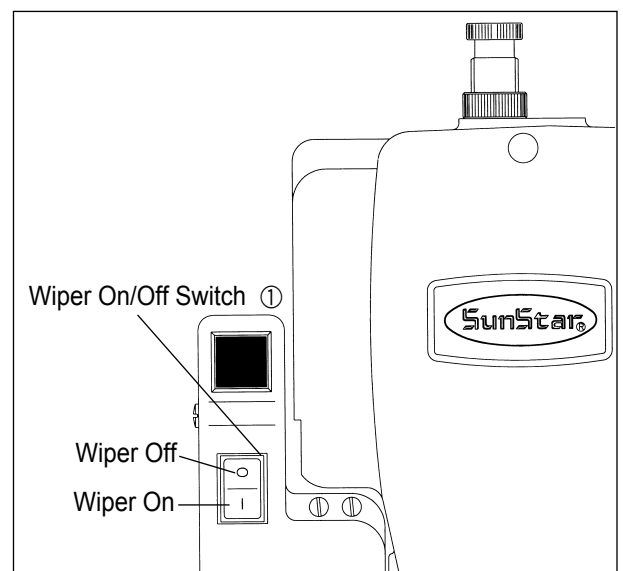


If a position of wiper is not proper, the wiper can be interfered with needle or inverting clamp devices during operating, therefore, precise operation can not be achieved.



[Fig. 47]

- E. For using the wiper, press the wiper operation switch ① and for not using it, press the wiper operation switch ①.



[Fig. 48]

10) Adjusting the Parts for Trimming

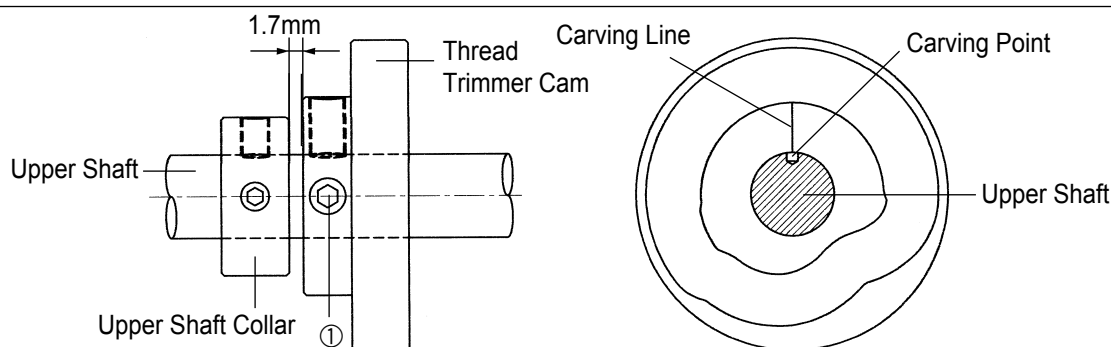
A. Setting the position of the trimming Cam

Set the upper shaft collar and the trimming cam 1.7mm apart from each other and place the trimming cam where the trimming cam carving line accords with the upper shaft carving point. Then, tighten screw ①.



Caution

If the trimming cam is not placed in the right position, the trimming operation may not be made correctly or the machine may be lock.



[Fig. 49]

B. How to adjust the link stopper

- ① With the needle bar in its lowest position, check of there is enough clearance between the trimming cam roller and both ends of the trimming cam when the trimming drive link is pushed in the direction of the arrow(←) within the trimming cam moving part.



Caution

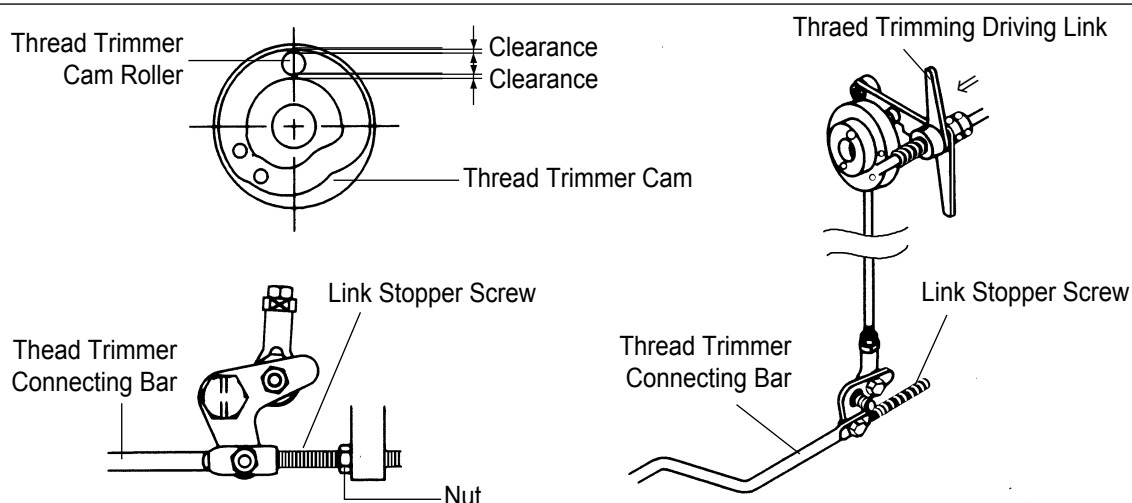
If there is not enough clearance between the trimming cam roller and both ends of the trimming cam, trimming may not be operated correctly or the machine may be lock when beginning to sew or trimming

- ② Make the end of the link stopper screw touch part ④ of the trimming link stick when the trimming cam roller is inserted into the trimming cam moving part. Then, tighten the nut.



Caution

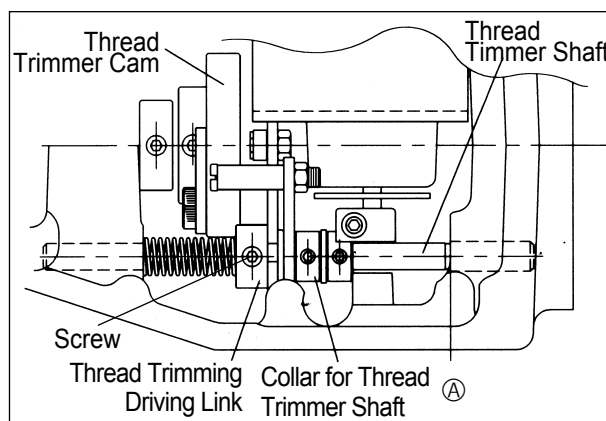
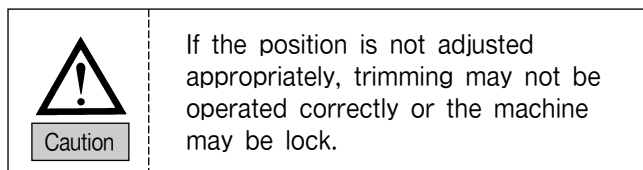
If the position is not set appropriately, the return to the previous point after trimming may be delayed and the first stitch may not be tight enough.



[Fig. 50]

C. Setting the trimming shaft in place

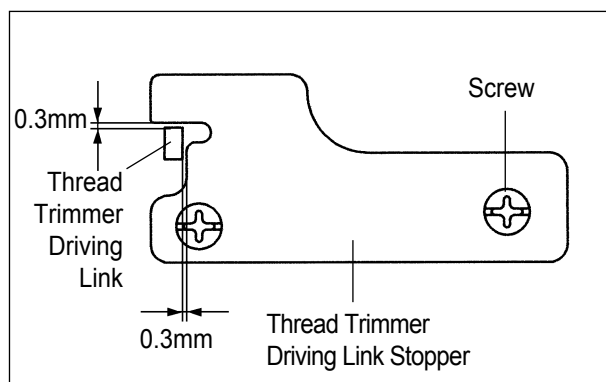
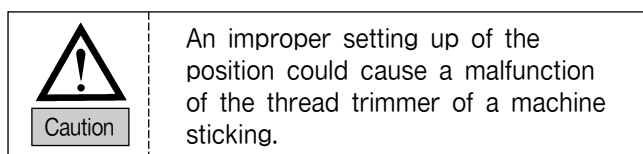
- ① Unfasten the trimming drive link screw and the trimming shaft collar screw.
- ② Make the trimming shaft tip accord with part ① of the arm.
- ③ Tighten the screws.



[Fig. 51]

D. Setion up the link stopper position

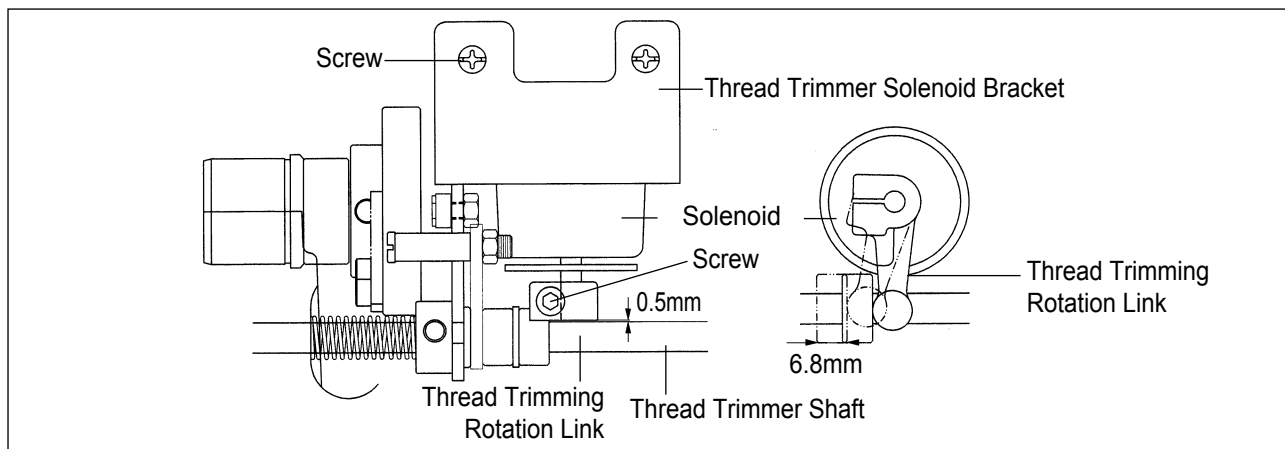
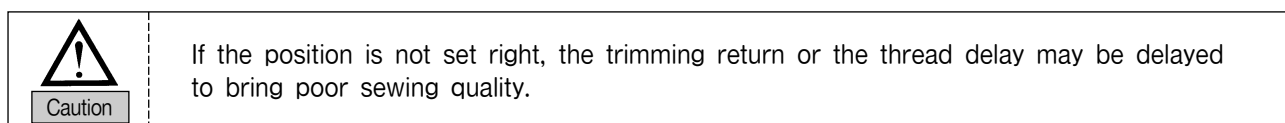
- ① Unfasten the joint screw of the thread trimmer drive link stopper in a status the thread trimmer is not operated. And then adjust to correct the notch intervals between the thread driving link and the thread driving link stopper to be 0.3mm each.
- ② And fasten the joint screw .



[Fig. 52]

E Setting the thread trimming solenoid in place

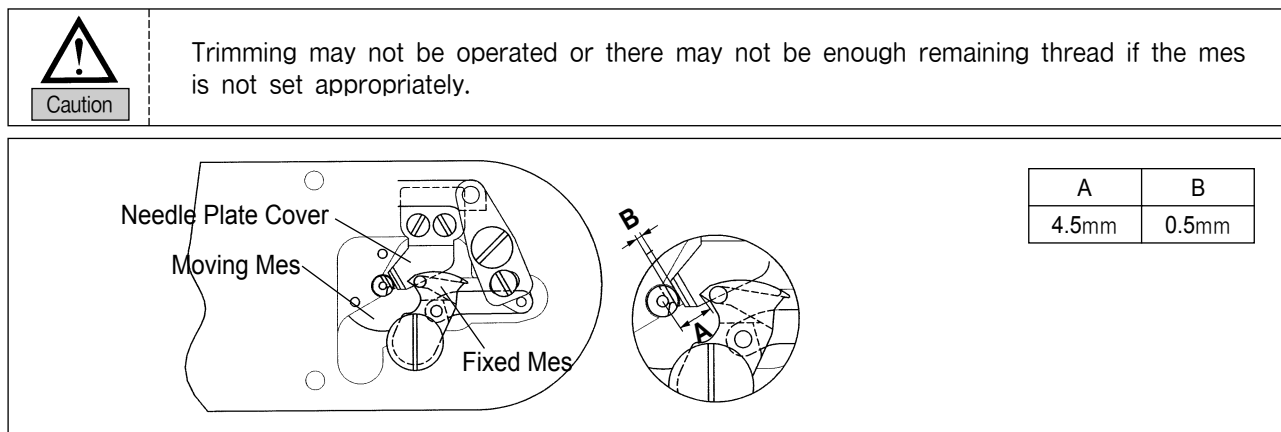
- ① After unfastening the thread trimming solenoid bracket screw, have the trimming shaft and the thread trimming solenoid rotary link 0.5mm apart from each other and tighten the screw back on.
- ② Unfasten the thread trimming solenoid rotary link screw and drive the thread trimming solenoid rotary link manually to move the trimming shaft collar 6.8mm in the direction of the arrow. Then, tighten the screw back on.
- ③ Check if the trimming shaft collar returns to its place when the thread trimming solenoid rotary link returns.



[Fig. 53]

F. Adjusting the Moving Mes and the Fixed Mes

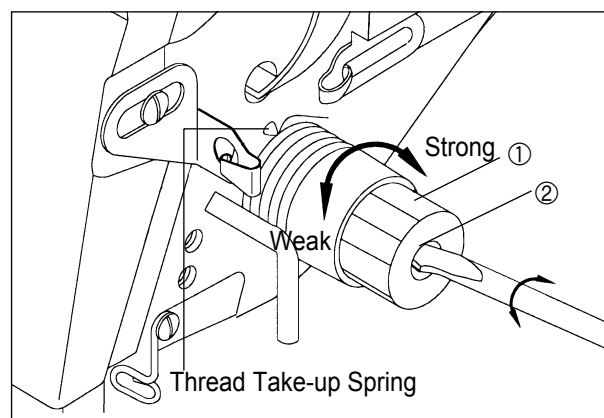
- ① When the needle bar stops at the upper position, use the trimming lever adjustment screw to adjust space **A** between the thread separation point of the moving mes and the throat plate hole as indicated in the table.
- ② Use the fixed mes screw to adjust space **B** between the fixed plate and the throat plate cover as indicated in the table.
- ③ after the adjustment, check the position of the mes by manual trimming operation.



[Fig. 54]

11) Adjusting the Devices for MainThread Adjustment

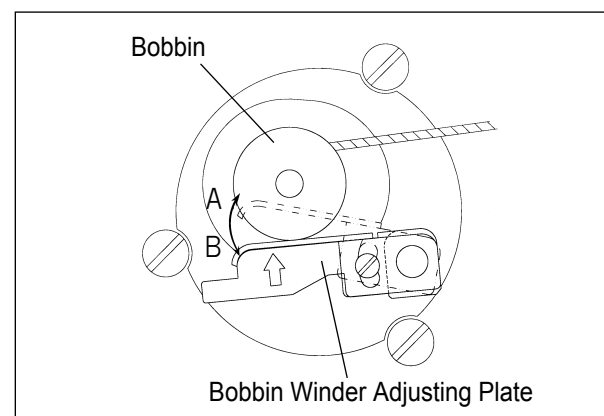
- A. When the tension control nut ① of the thread control device is turned clockwise, the upper thread is tightened and becomes loose as the nut is turned counter clockwise. Adjust the tension according to the sewing conditions such as material, thread, number of stitches etc.
- B. To tighten the take-up lever spring, use a driver to turn the groove ② on the edge face of the thread tension control device shaft clockwise. And to make the spring relax, turn it counterclockwise.
(Standard operating quantity 6~8mm, and tension is about 30~50g.)



[Fig. 55]

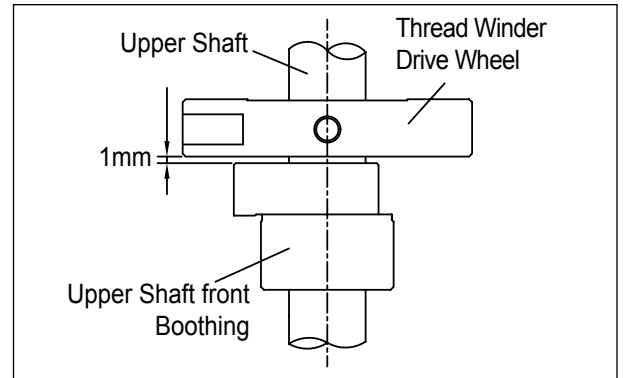
12) Adjusting the Winder Devices

- A. To adjust the winding capacity of the bobbin, use the beginning position of the winding control plate, and after unfastening the screw, turn the plate in direction **A** for large winding capacity and turn in direction **B** for small winding capacity.



[Fig. 56]

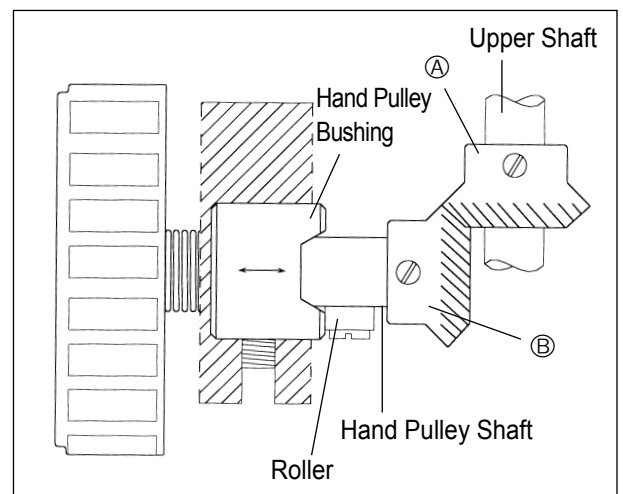
- B. After adjusting to correct the distance from the presser foot drive cam to the thread winder drive wheel to be 1mm, fasten the joint screw.



[Fig. 57]

13) Adjusting the Hand Pulley Device

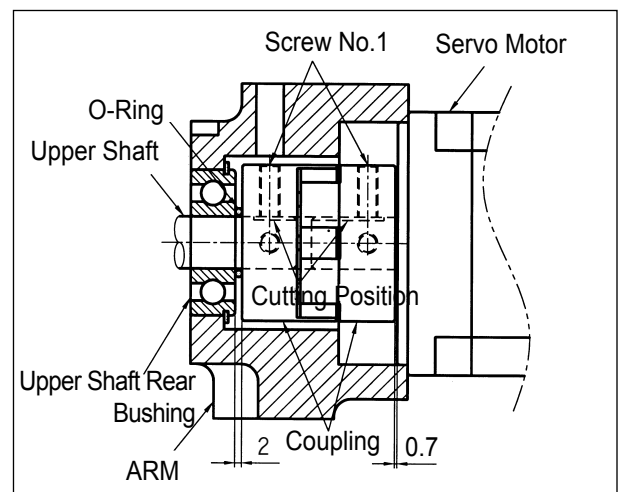
- Tighten the screw after putting the hand pulley gear ② and the hand pulley shaft tip in accord.
- Adjust the clearance of hand pulley gears ① and ② and tighten the screws.
- Move the bushing in the direction of the arrow to reduce the backlash between gears ① and ② when the roller is on the end of the pulley bushing.



[Fig. 58]

14) Mounting the Direct Motor and Adjusting Method

- When you mount the coupling on the servo motor, fit the screw No. 1 of coupling to the flat surface of the servo motor shaft and make the clearance between the coupling and servo motor 0.7mm.
 - When you mount the coupling on the upper shaft, fit the screw No. 1 of coupling to the flat surface of the upper shaft and make the clearance between the coupling and upper shaft bushing(R) 2mm.
 - After mounting both couplings, check the positions of each screws to the aligned.
- ※ If the positions of each screws are not aligned, the needle does not stop normal position.

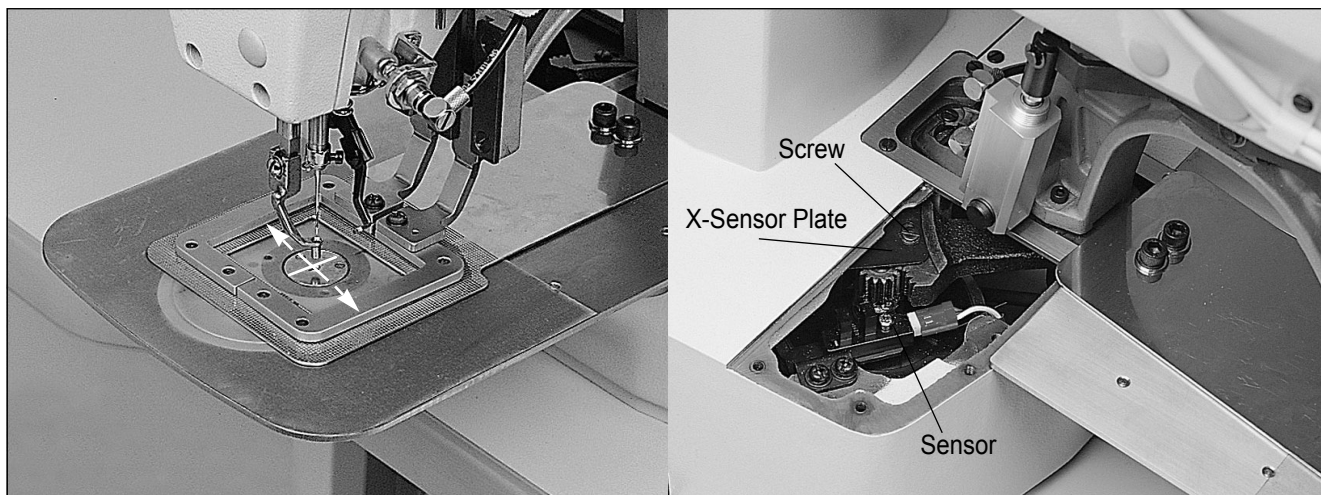


[Fig. 59]

15) Setting Up the X-Y Origin

A. How to set up X-axis origin

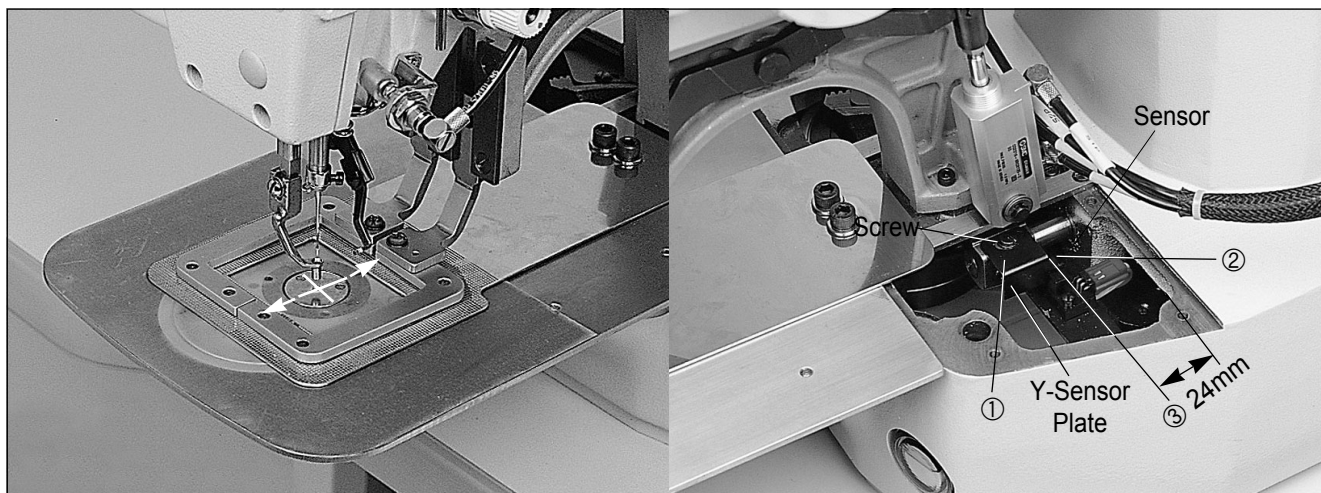
- Ⓐ Separate a bed cover (left).
- Ⓑ Move the center of work clamp foot to be placed on the center of X-axis.
- Ⓒ As seen in the figure, unfasten the bolts of X-sensor plate and let the end of X-sensor plate locate on the center of sensor, then fasten the bolts with screw-driver.



[Fig. 60]

B. How to set up the O-point of the Y-axis

- Ⓐ Separate the bed cover (on the right).
- Ⓑ Adjust the distance ③ between the Y-transfer arm ① and the bed surface ② to 24mm.
- Ⓒ Move the feed bracket to position the center of the upper feed plate at the center of the Y-axis. You shall keep the distance ③ to 24mm.
- Ⓓ After adjusting the end of Y-sensor plate to correct with the sensor center by unfastening the joint screw in the Y-sensor sensing plate as shown in the Figure, fasten the joint screw using a spanner.



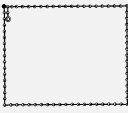
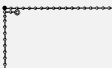



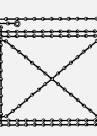
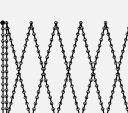

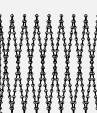
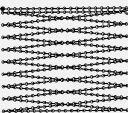
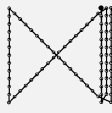





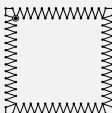







[Fig. 61]

1) Machine Part

No.	Condition of Breakdown	Cause of Breakdown	Troubleshooting
1	Error on operation or drive of machine	Loosing of belt tension and damage on belt.	Adjust the belt tension or exchange it.
		Fuse shortage for main power or circuit	Check the fuse shortage of main shaft drive motor in a controller box or exchange it
		Deviation from Y and Y limit of feed bracket	Move the feed bracket to normal place (inside limit switch)
2	Bad position of stopping position	Slackness of main drive belt	Adjust the belt tension
		Due to improper synchro position	Adjust setting position of synchro
3	Needle bent	Damage on needle.(Bending of needle, cracks on needle hole or groove, and, abrasion or transformation of needle tip)	Exchange the needle
		Wrong installation of needle	Install the needle properly
		Contact of needle with shuttle	Adjust the distance properly between a needle and shuttle
4	Thread is cut	Wrong insertion of thread	Insert the thread properly
		Wrong installation of needle (Height of needle or direction of needle tip)	Reinstall the needle
		Damage on needle(Bending of needle, cracks on needle hole or groove, and abrasion or transformation of needle tip)	Exchange the needle.
		Excessive tension of upper thread and under thread	Adjust the tension
		Excessive tension and stroke of take-up lever spring	Adjust the tension and stroke of take-up lever spring
		Crack on the controlling hole of shuttle surface spring	Exchange the shuttle surface spring
5	Stitch skipping	Use of bending needle	Exchange the needle
		Use of improper sized needle compared with using thread	Exchange the needle
		Wrong installation of needle	Reinstall the needle.
		Improper timing for needle and shuttle	Readjust the timing for needle and shuttle
		Improper gap between groove and shuttle point	Readjust the timing for needle and shuttle
		Excessive tension of take-up lever spring and stroke	Adjust the tension of take-up lever spring and stroke
6	Error in thread tightening	Weak tension of upper thread	Readjust the tension of upper thread.
		Weak tension of lower thread	Readjust the tension of lower thread.
		Improper timing for needle and shuttle	Readjust the timing for needle and shuttle
7	Error in trimming	Laxity of exchanging tension between movable mes and fixed mes	Readjust the tension of fixed mes.
		Abrasion and crack on blade of movable mes and fixed mes	Exchange the movable mes and fixed mes
		Wrong position of trimming cam.	Readjust the position of trimming cam

8

PATTERN LIST

No.	Pattern	Model	Stitch Number	Range of Sewing		No.	Pattern	Model	Stitch Number	Range of Sewing		No.	Pattern	Model	Stitch Number	Range of Sewing	
				X (mm)	Y (mm)					X (mm)	Y (mm)					X (mm)	Y (mm)
33		B1254	75	50	40	34		B1254	59	45	29	35		B1254	59	30	40
		B1263	75	60	30			B1263	59	45	25			B1263	51	30	30
36		B1254	139	50	30	37		B1254	159	50	40	38		B1254	155	30	35
		B1263	153	60	30			B1263	121	45	25			B1263	145	30	30
39		B1254	219	50	40	40		B1254	229	50	40	41		B1254	335	45	40
		B1263	193	60	30			B1263	223	60	30			B1263	349	60	30
42		B1254	397	50	40	43		B1254	84	30	30	44		B1254	147	35	40
		B1263	373	60	30			B1263	84	30	30			B1263	133	35	30
45		B1254	56	33	30	46		B1254	56	35	35	47		B1254	74	36	36
		B1263	56	33	30			B1263	48	30	30			B1263	63	38	30
48		B1254	78	8	35	49		B1254	116	31	31	50		B1254	109	28	28
		B1263	70	8	30			B1263	113	30	30			B1263	109	28	28
51		B1254	136	28	28	52		B1254	122	40	28	53		B1254	152	34	31
		B1263	136	28	28			B1263	122	40	28			B1263	152	32	30
54		B1254	142	40	24	55		B1254	65	30	8	56		B1254	65	8	30
		B1263	142	40	24			B1263	65	30	8			B1263	65	8	30

Application	No.	Pattern	Stitch Number	Range of Sewing	
				X (mm)	Y (mm)
For Heavy and General Materials	1		28	10	2
	2			16	2.5
	3		36	10	2
	4			16	2.5
	5		42	10	2
	6			16	2
	7			16	2.5
	8			24	3
	9		56	24	3
	10		64	24	3
For Thin Materials	11		21	6	2.5
	12		28	6	2.5
	13		36	6	2.5
For Knit	14		14	8	2
	15		21	8	2
	16		28	8	2
Straight Line	17		21	10	0

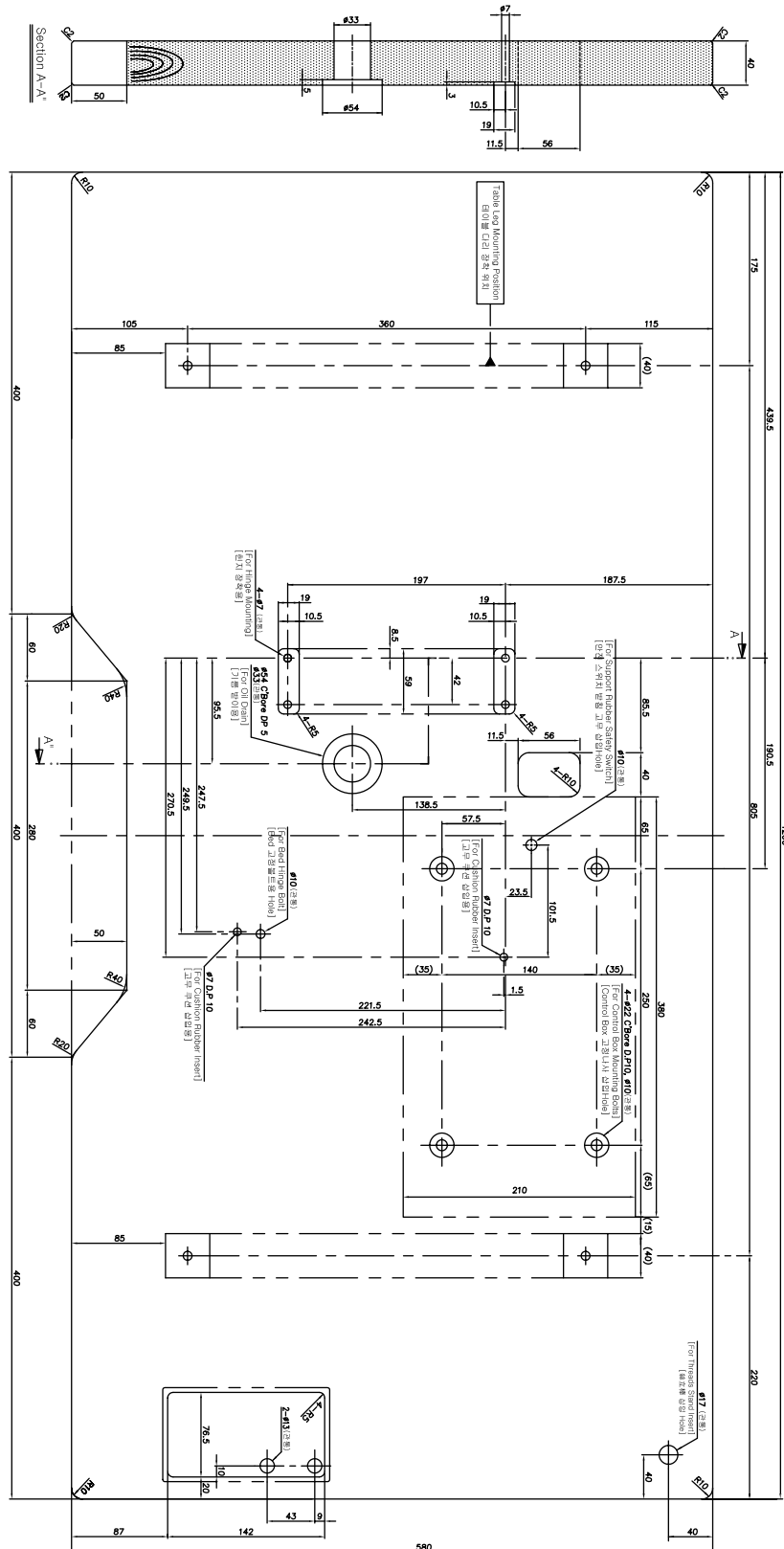
Application	No.	Pattern	Stitch Number	Range of Sewing	
				X (mm)	Y (mm)
Straight Line	18		28	10	0
	19			25	0
	20		36	25	0
	21		41	25	0
	22		44	35	0
Semi Circle	31		42	11	7
	32		42	11	7

Vertical				
No.	23	24	25	26
Pattern				
Stitch Number	28	36	42	56
Range of Sewing	X (mm)	4	4	4
	Y (mm)	20	20	20

Linear Vertical				
No.	27	28	29	30
Pattern				
Stitch Number	18	21	21	28
Range of Sewing	X (mm)	0	0	0
	Y (mm)	20	10	20









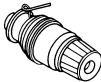




- Note) 1. Pattern No. 33 to No. 56 are for label, waving, etc. works.
2. Pattern No. 1 to No. 32 are for Bartack works. Please work after the option gauge has been mounted.
(When operating Bartack works, be sure to use the standard shuttle hook or the standard bobbin case)
(In case of Pattern No. 1 to No. 32 and No. 47 to No. 56, Please use it by lowering the maximum sewing speed.)
3. The status of sewing shall be not uniform according to the kind of sewing materials and other conditions in case of patterns for Bartack works.
In this case, Please make use of our company's SPS/C(D)-B1201 series
4. Besides the above 56 Patterns, it is available to provide with 43 patterns additionally.
(Maximum 99 patterns)

DRAWING OF TABLE



10

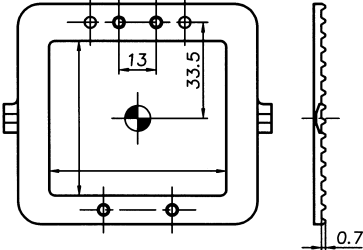
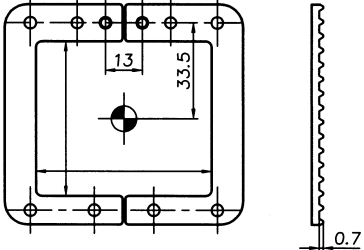
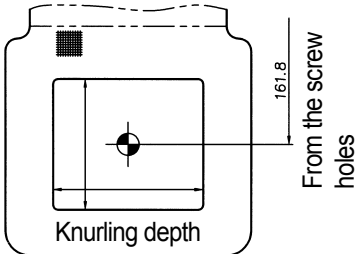
GAUGE LIST

No.	Name		SPS/D-B1254□□ / B1263□□			
			MA(Medium)	HA(Heavy)	Large Hook Option(MA)	Large Hook Option(HA)
1	Thread Take Up Lever Ass'y		□ 08S001P-306H			
2	Link Cam		□ 02-102A-120H			
3	Needle Bar		□ 04S001S-306H			
4	Thread Guide of Needle Bar		◇ 04S008S-306G	○ 04S007S-306H	◇ 04S008S-306G	○ 04S007S-306H
5	Needle		♣ DP×5 #16	♣ DP×17 #19	♣ DP×5 #16	♣ DP×17 #19
6	Shuttle Race Ring		♣ 07-022A-120M (Carving Point M)	♣ 07-021A-120H (Carving Point H)	□ 07S027S-306H	
7	Shuttle		♣ 07-029A-120M	♣ 07-028A-120H	◇ 07S029S-306G	◇ 07S028S-306H
8	Shuttle Upper Spring		□ 07S040S-306G			
9	Thread Tension Adjusting Ass'y		♣ 40S001S-306G	□ 40S001S-306H	♣ 40S001S-306G	□ 40S001S-306H
10	Needle Plate Cover		♣ 10-043A-120M (ø 1.6)	□ 10-041A-120H (ø 2.3)	♣ 10S043S-306G	♣ 10S042S-306H
11	Fixed Knife		□ 10-101A-120H		○ 10S045S-306H	
12	Moving Knife		□ 10-106A-120H		○ 10S047S-306H	
13	Moving Knife Shoulder Screw		□ 10-048A-120H		○ 10S048S-306H	

NOTE) □ : Common Use with SPS/C(D)-B1201H Model (Heavy Weight Material)
 ♣ : Common Use with SPS/C(D)-B1201M Model (General Material)
 ○ : Common Use with SPS/A(B)-1306HS Model (Heavy Weight Material)
 ◇ : Common Use with SPS/A(B)-1306GS Model (General Material)

◆ Feed Plate List

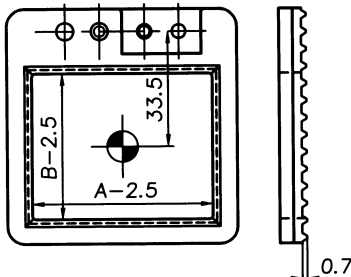
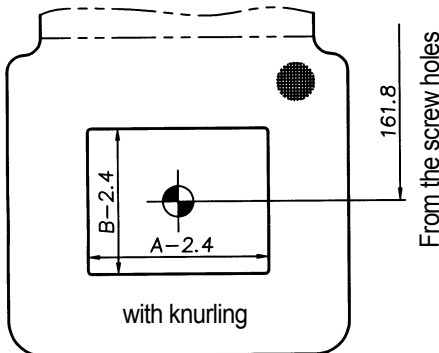
◎ Standard Type

SPS/D-B12□□ HA-20, MA-20				SPS/D-B12□□ HA-22, MA-22			
Upper Feed Plate	A			D			
	B1254	22-008A-1254	1ea	B1254	22-010A-1254, 22-011A-1254	1ea	
	B1263	22-008A-1263		B1263	22-009A-1263, 22-010A-1263		
Lower Feed Plate							
	B1254	22-034A-1254		1ea			
	B1263	22-032A-1263					

◎ Option Type for Bartacking Job

	Option E	Option F	Option G
Upper Feed Plate	E	F	G
	Depth of knurling : 0.5	Depth of knurling : 0.7	Depth of knurling : 0.7
	22-044A-1254 : 1ea 22-045A-1254 : 1ea	22-047A-1254 : 1ea 22-048A-1254 : 1ea	22-050A-1254 : 1ea 22-051A-1254 : 1ea
Lower Feed Plate			
	22-046A-1254 : 1ea	22-049A-1254 : 1ea	22-052A-1254 : 1ea

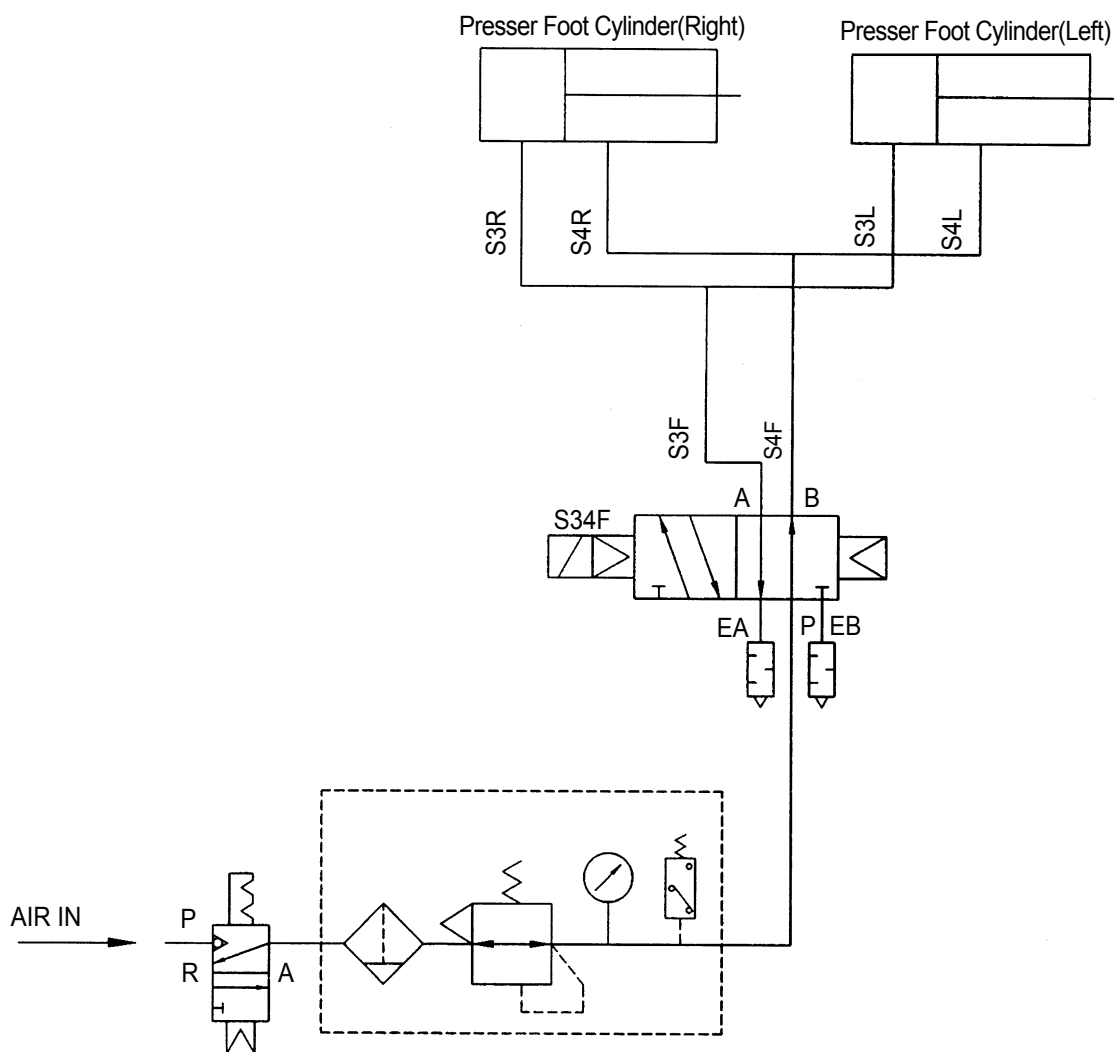
◎ Special Option type for Label Attaching

HA-22, MA-22						
Label option for Separately Driven Feed Frame						
Upper Feed Plate	 <p>Depth of knurling : 0.7</p>					
	<table><tr><td>Label Size</td><td>A × B</td></tr><tr><td>Sewing Area</td><td>A-5 × B-5</td></tr></table>	Label Size	A × B	Sewing Area	A-5 × B-5	
	Label Size	A × B				
Sewing Area	A-5 × B-5					
Order Made Parts						
Lower Feed Plate	 <p>with knurling</p>					
	Order Made Parts					

11

PNEUMATIC DIAGRAM

- 1) Drawing of the Pneumatic Hose of SPS/D-B1254□A-20, SPS/D-B1263□A-20 Machine
(for Monolithic Feed Frame)



**2) Drawing of the Pneumatic Hose of SPS/D-B1254□A-22, SPS/D-B1263□A-22 Machine
(for Separately Driven Feed Frame)**

